OR, AN

ALMANACK

For the YEAR of

Our LORD GOD, 1783;

Being the Third after

BISSEXTILE, or LEAP-YEAR,

And from the World's Creation, 5787.

Wherein is Contained the Lunations, Conjunctions, Aspects, and Effects of the Planets; and Increase, Decrease, and Length of the Days and Nights; with the Rifing, Southing, and Setting of the Planets and fixed Stars throughout the Year; whereby may be known the exact Hour of the Night at all Times, when either the Moon or Stars are feen.

Calculated according to Art, and referred 30 the Horizon of the ancient and renowned Borongh Town of Stamford (formerly a famous University And Latitude is 52 Deg. 20 Min. fitting all the middle Counties of ENGLAND, and, without fenfille Diror, the whole Kingdom.

Non est è Terris mollis ad Aftra Via.

YCHOWING, Philomath.

LONDON

Printed for the COMPANY of STATIONERS, And fold by J. WILKIE, at their Hall, in Ludgate-Street.

[Price, flitched, NINE PENCE.]

Common Nor	ES	and	Moveable FEA	ST	s.
Dominical Letter -		E	Septuagefima Sur	nd.	Feb. 16
Golden Number -	-	17	Shrove Sunday		Mar: 2
Epact	-	26	Easter Day -		Apr. 20
Cycle of the Sun -	-	28	Whit-Sunday	-	June
Roman Indiction -	-		Trinity Sunday		June 1
Number of Direction		30	Advent Sunday	-	Nov. 3

A CATALOGUE of the Most Reverend, Right Reverend, and Reverend, the Archbishops, Bishops, and Deans, exercifing Ecclefiastical Jurisdiction in England, 1783.

Dr. Robert Lowth Hon.Dr.JohnEgerton Dr. North Lord James Beauclerk Hon. Dr. James Yorke Sir Wm. Ashburnham Hon.Dr. S. Barrington Dr. Philip Yonge Dr. Lewis Bagot Dr. Charles Moss Dr. Jonathan Shipley Dr. Edmund Law Dr. John Hinchcliffe Dr. Richard Hurd Dr. Samuel Hallifax Dr. John Thomas Dr. Cornwallis Dr. John Moore Dr. Beilby Porteus Dr. John Butler Dr. John Ross Dr. Thomas Thurlow Dr. John Warren

Dr. George Mason

Archbishops.

Dr. Wm. Markham

Bilbops.

Deans Names. H. Dr. Fr. Cornwallis Dr. George Horne Dr. John Fountayne

Hon. Wm. Digby

Dr. Newton Ogle Dr. Nat. Wetherell Dr. William Cooke Dr. Charles Harward Dr. Rowney Noel

Dr. Philip Lloyd Dr. J. Hallam Lord Fran. Seymour Mr. Shipley

Dr. Thomas Wilson Dr. Adams, Archdeac. Dr. Tarrant

Dr. Foley Dr. Josiah Tucker Dr. Dampier

Dr. Proby

Dr. Thomas Lloyd Dr. William Smith Dr. Lewis Bagot Dr. Jeremiah Milles

Dr. Richard Cust Mr. Wollaston, Prec. Dr. John Thomas

Hon. John Harley

Sees Names. Canterbury

h Eigh From t On the la eigh:

From th

From th From th

From th

On the

On the

la Eigh

la 15 D

la 3 W

On the

On the

h Eigh

la 15 D

N. B. 1

The

Note, T

T

The.

l. In

K. Ben

Il. In

Co. Ple

V. In

exchequ

Lloyd

MI

York Dr. Thomas Thurlow London Durham

Winchester Hereford

Ely Chichester Salisbury Norwich Bristol

Bath and Wells St. Alaph Carlifle

Landaff Peterborough Worcester

Gloucester Rochester Litchf. and Cov.

Bangor Chester Oxford Exeter Lincoln St. David's Westminster

Sodor and Man Windfor

A TABLE of TERMs and their Returns.

HILARY	Term b	egine	Tanuary	20	-ende	February	7.0
*** TUNE	T CLIMB F	CEIII3	1 amualy	24	CIACIS	redituaty	120

nd er

lls

ov.

Ian

Returns or Effoign Days.	Exc.	Ret.	App.	W.D.
la Eight Days of St. Hilary, Jan. 20	21	22	23	Thurf.
from the Day of St. Hilary in 15 Days, 27	23		30	Thurf.
On the Morrow of the Purif. bleff. Mary, Feb. 3	4	5	6	Thurf.
		11	12	Wedn.

EASTER Term begins May 7-ends June 2.

				and the same of
from the Day of Easter in 15 Days,	May	4 5	1 6 1 7	Wedn.
from the Day of Easter in 3 Weeks,			13 14	
From the Day of Eafter in I Month,			20 21	
from the Day of Easter in 5 Weeks,		25 26		Wedn.
On the Morrow of the Afcention, -	/	30 31		Mond.

TRINITY Term begins June 20-ends July 9.

On the Morrow of the Holy Trinity,	June	16	17	18	20	Friday.
la Eight Days of the Holy Trinity, -	15	22	23	24	25	Wedn.
la 15 Days of the Holy Trinity,	-	29	30	J. I	2	Wedn.
in Weeks of the Holy Trinity,	July	6	7	8	9	Wedn.

MICHAELMAS Term begins November 6-ends November 28.

-	-	No	v. 3	4	5	6	Thurf.
	-	-	12	13	14	15	Satur.
			18	19	20	21	Friday
-	-	-	25	26	27	28	Friday
			No	12	12 13	12 17 14	- Nov. 3 4 5 6 12 13 14 15 18 19 20 21 25 26 27 28

M.B. No Sittings in Westminster-Hall upon Ascension-Day, Midsummer-Day, and the 2d of February.

The Exchequer opens Eight Days before any Term begins, except Trinity, before which it opens but Four Days.

Note, The First and Last Days of every Term, are the First and Last Days of Appearance.

The Names of the Learned Judges in the Law.

The Rt. Hon. Ed. Lord Thurlow, Lord High Chancellor of G. Britain, Right Hon. Sir Thomas Sewell, Knt. Master of the Rolls.

I. In the S Rt. Hon.W. Earl of Mansfield, L.C. J. Edw. Willes, Efq. K. Bench. Sir Wm. Henry Ashurst, Knt. Fran. Buller, Esq.

II. In the { Rt. Hon. Al. Ld. Loughborough, L.C. J. H. Gould, Efq. Co. Pleas. { Sir Geo. Nares, Knt. John Heath, Efq.

V. In the Sir John Skynner, Knt. L. C. B. Sir James Eyre, Knt. whequer. Sir Beaumont Hotham, Knt. Sir Rich. Perryn, Kt.

Hoyd Kenyon, Efq. Att. Gen. Pepper Arden, Efq. Sollic. Gen.

The REGAL Table.

The Year, Month each King and reign, accounting gin Jan. 1.	Queen began	to	Lengt R	h of e	ach	exp	ber of Years bired fince their igns ended.
Kings Names	began to reig	gn	Υ.	M.	D.	beg	KingsNames
William I.	1066 Oct. 1	4	20	10	26	696	William 1
William II.	1087 Sept.	9	12	10	24	683	William 2
Henry I.	1100 Aug.	2	35	3	29	648	Henry 1
Stephen	1135 Dec.		18	10	24	629	Stephen
Henry II.	1154 Oct. 2	25	34	8	11	594	Henry 2
Richard I.	1189 July	6	9	9	0	584	Richard 1
John -			17	6	13	567	John
Henry III.	1216 Oct.	19	56	0	28	511	Henry 3
Edward I.	1272 Nov.	16	34	7	21		Edward 1
Edward II.	1307 July	7	19	6	18	456	Edward 2
Edward III.	1327 Jan.	25	50	4	27	406	Edward 3
Richard II.	1377 June	21	22	3	8	384	Richard 2
Henry IV.	1399 Sept.		13	5	20		Henry 4
Henry V.	1413 Mar.		9	5	11	361	Henry 5
Henry VI.	1422 Aug.	31	38	6	4	322	Henry 6
Edward IV.	1461 Mar.	4	22	1	5	300	Edward 4
Edward V.	1483 April		0	2	13	300	Edward 5 Richard 3 Henry 7
Richard III.	1483 June		2	2	C	298	Richard 3
Heary VII.	1485 Aug.		23	8	C	274	Henry 7
Henry VIII.	1509 April		37	9	6	236	Henry 8
Edward VI.	1547 Jan.	28	6	5	8	230	Edward 6
Q. Mary I.	1553 July	6	5	4	11	229	
Q. Elizabeth				4	7	180	Q. Elizabeth
James I.	1603 Mar.		22	0	3	1158	James 1
Charles I.	1625 Mar.		23	10	3	134	Charles 1
Charles II.	1649 Jan.			0		9	Charles 2
James II.	1685 Feb.	6	4	0		7 9	
Will. 3. & M	. 1689 Feb.			. 0	2	8	William 3
Q. Anne	1702 Mar.		12	4	2.		Q. Anne
George I.	1714 Aug.	1	12	10		5	6 K. George
George II.	1727 June	11	133	4			3 K. George
George III.	1760 Oct.	25	;	Crov	vned	Sep	t. 22, 1761.

The U

I.

Ta posed again Coast Place

Portsi Roche Down Denb

Londo

Scarb Flam Plymo Lynn Bosto Brid Yarn

lse o Dove Rye,

II.

the Tab

it; ileav

past the Sun The Use of the following TABLE of the Moon's Southing, to find the Time of High-Water, and the Hour of the Night.

I. To find the Time of High-Water in most Parts of E N G L A N D.

Years their

ames

1

1

1

3123245645378

beth

rge 1

rge 1

Take the Time of the Moon's Southing for the Day proposed, and to that add the Hours and Minutes which stand against the Place required in the following Table of Sea-Coasts, and the Sum will be the Time of High-Water at the Place required on that Day.

A Table of the Sea Coasts.	H.	M.
Portsmouth, Queenborough, Southampton,	0	00
Rochester, Winchelsea, Flushing, -	0	45
Downs, Gravesend, Ramkins, Guernsey,	I	30
Denbigh, Bell-Isle, Holy-Isle, Downs-Road, -	2	1.5
London, Tinmouth, Whithy, Hartlepool,	3	00
Scarborough, Berwick, Flushing, Staples,	3	45
Flamborough, Humber, Bridlington-Bay,	4	30
Plymouth, Ramsay, Newcastle, Severn,	5	15
Lynn, Fosdyke, Hull, Weymouth, Dartmouth, Cross-Keys,	, 6	00
Boston, Start-Point, Foulness, Bristol-Key,	6	45
Bridgewater, Milford Haven, Lizard, Wintertown,	7	30
Yarmouth, Isle of Wight, the Needles,	8	15
lle of Man, Orkney, Pool, South-Foreland,	9	10
Dover, Harwich, Orfordness, Bullein, -	10	10
Rye, Solebay, Margate-Road, -	11	15

II. To find the Hour of the Night by the Shadow of the Moon on a Sun-Dial.

1. When the Shadow falls precisely on the Hour 12, then the Time of the Moon's Southing, found in the preceding Table, is the exact Time of Night. But in other Cases,

2. If the Shadow wants of 12, see how much it wants of it; which Time, subtracted from that of the Moon's Southing, leaves the Time of Night. Note, You must add 12 Hours to the Moon's Southing, if Need be.

3. If the Shadow has past 12, add the Time that it has past it to the Time of the Moon's Southing; the Sum will be the Time of Night required; abating 12 Hours from that Sum, if Need be.

A TABLE of the Moon's Southing, of excellent Use to

MI	Ta	nua	rv I	Feb	oruary	M	larc	h	A	pri	1		May		.]:	ine	
D	h		m	h	m	h		m	h		m	h		m	h	1	m
ī	10	m	1	11	m 48	10	m	33	11	m	42	11		56		a	8
2	11		7	0	a 43	11		24	0	a	26	0	a	43	2		0
3	0	a	14	I	34	0	a	12	1		11	I		31	2	5	0
	1		17	2	19	0		57	1		57	2		22	3	3	38
4 5 6	2		14	3	3	1		41	2		45	3		14	4	2	24
6	3		6	3	46	2		25	3		34	4		6	5		8
	3		53	4	30	3		9	4		25	4		56	5		i
78	4		53 36	5	13	3		56	5		17	5		44	6	3	33
9	5		18	6	1	4		44	6		8	6		30	7	1	17
10	5		59	6	49	5		34	6		58	7		14	8		3
11	6		42	7 8	.40			26	7		46	7		59	8		54
12	7		26	8	32	1 7		18	8		33	8		43	9		49
13	8		12	9	23	8		10	9		18	9.		29	10		50
14	9		0	10	13	8		59	10		3	10		19	11	. !	57.
15	9		51	11	3	9		47	10		50	11		13	IT	OTI	
16	10		42	11	50			34	11		38	n	nor	793	1		4
17	11		34	1	norn	II		20	I	noi	n	0		12	2		10
18	1	noi	-	0	35	1	mo		0		30	I		17	3	1	10
19	0		24	I	20			6	I		27	2		23	.4		4
20	I		12	2	5	0		52	2		27	3		29	4		53
21	1		.57	2				41	3		31	4		29	5		39
22	2		41	3				33	4		35	5		26	6		23
23	3		24	4				29	5		37	6		17	7		-
24			8	5	27	4		30	6		36	7		3	7		48
			54	6	28	5		33	7		29	7		45	8		33
25	5		43	7	32	6)	36	8		18	8		29	9		20
27	6		37	8	36	7		36	9		3	9		11	10		5
28	7		35	9		8	3	33	9		45	9		55	10		55
29	1		38			19)	25	10		29	10		39	11		56
30	7		44			10		14	11		12	II		28	0	a	4
31	10		47			1.	1	0				0	a	17	1	1713	

4 m. night. 5 h. March 20 d. Spring Quarter begins afternoon. Summer Quarter begins June 21 3 12 morning. Automa quarter begins -Winter Quarter begins -Sept. 49 23 4. night. Dec. 13

M D

find

1

Ju

find the Time of High-Water, and the Hour of the Night.

M		ul	y	A	ug	uft	Sep	ten	nber		Ctol	ber	No	en	ber	Dec	em	ber
D	h		m	h		m	h		m	h		m	h		m	h		in
1	. 1	a	29	2	a	22	3	a	24	4	a	17	6	a	20	6	a	41
2	2		17	3		5	4		16	5		19	7		12	7		25
3	3		1	3		47	5		13	6		22	8		I	8		9
4	3		44			33	6		13	7		23	8		48	8		53
	4		26	5 6		21	7		17	. 8		21	9		33	9		39
5	5		8	6		15	8		21	9		12	10		18	10		27
7 8	5		51	7		14	9		21	10		1	II		4	11		17
8	6		37	8		17	10		18	10		48	II		51	n	101	
9	7		29	9		23	11		11	11		34	n	101		0		8
10	8		26	10		28	п	non	n	n	nor	n	0		41	1		0
11	9		29	11		29	0		0	0		20	I		31	I		51
12	10		36	m	or	n	0		47	I		6	2		24	2		40
13	11		43	0		25	I		34	I		55	3		15	3		26
14	m	or	n	I		16	2		20	2		47	4		6	4		9
15	0		47	2		4	3		9	3		38.	4		54	4		50 31
16	1		46	2		51	3		58	4		31	5		39	5		31
17	2		39	3		37	4		48	5		23			23	6		11
18	3		28	4		22	5		40	6		12	7		5	6		53 38
19	4		13	5		9	6		32	7		0	7		47	7		38
20	4		57	5		58	7		23	7		46	8		29	8		27
21	5		41	6		49	8		13	8		30	9		14	9		22
22	6		26	7 8		40	9		1	9		13	10		2	10		23
23	7 8		12			32	9		47	9		56	10		55	11		29
24			1	9		23	10		30	10		40	II		54	0	a	36
25	8		52	10		11	11		14	11		27	0	a	57	1		39
26	9		43	10		58	11		57	0	a	18	2		3	2		39
27	10		34	11		42	0	a	42	I		13	3		7	3		34
28	11		24	0	a	26	I		29	2		13	4		8	4		24
29	0	a	11	I		8	2		21	3		17	5		3	5		10
30	0		57	1		51	3		17	4		21	5		54	5		55
31	I		40	2		37				5		2;			-	6		39

VENUS is an Evening Star from the 4th of January till October the 22d, and then a Morning Star to the Year's End.

JUPITER is a Morning Star to the 20th of July, and after that an Evening Star till the End of the Year.

	Fir Ful	w Moon 3 da It Quarter 10 da I Moon 18 da It Quarter 26 da	y, at 9 1 y, at 2 1	morning afternoon	n.	M Jupiter Venus rifes 1 8 m 3 8 m 6 7 7 41 fets 13 7 21 4 a 14 19 7 0 4 28 25 6 39 4 43
	W D	Holy Days, ⊙ rifes & fets	D rifes & fets	D's Longit.	D's Declin.	Aspects and Weather
1 2 3 4 4 5 6 7 8 9 10 11 12 15 16 17 18 19 20 21 22 23 24 25 26 27 28 20 27 20 27 2	WIFSE MIWIFSE MIWIFSE MIW	Circumcision Sun rises 8 4 Sun sets 3 57 2 S. aft. Christ. Epiph. 12th D. Lucian Sun rises 7 58 Sun sets 4 3 1 S. aft. Epiph. Cam.T. begins Oxf. T. begins Oxf. T. begins Sun rises 7 51 Old 12th Day O.Ch.b.d.keps 2 S. aft. Epiph. Fabian Agnes Vincent Hil. Term beg. Conv. St. Paul. 3 S. aft. Epiph. Pr. Aug. Fr. bo. Sun sets 4 28	6m 32 7 54 D fets 5 a 12 6 43 8 12 9 32 10 48 morn 0 2 1 16 2 30 3 44 4 56 6 4 7 0 7 46 D rifes 5 a 5 6 23 7 42 8 59 10 17 11 36 morn 1 12 2 9 3 58 5 23	15 ₹ 17 0V\$29 15 40 0 ≈ 39 15 17 29 27 13 € 8 26 19 9Ŷ 5 21 30 3 ⊗ 38 15 36 27 28 9 118 21 10 3 № 7 15 11 27 23 9 № 43 22 12 4 № 51 17 41 0 ≈ 43 13 59 27 31 11 № 21 25 28 9 ♀ 52 24 № 51	27 s 27 28 28 28 27 22 24 18 19 42 14 8 8 3 1 49 4 n 17 10 3 15 20 19 57 23 44 26 31 28 8 28 27 27 26 25 5 21 34 17 2 11 42 5 49 0 s 24 6 44 12 52 18 31 23 17 26 44 28 27	ound of the state
130	T _F	K.Cha.I.mart.	6 31		28 10	

Venus	M Satur		Jupiter	Mars	Venus
rifes		Declin. Lo	ngit. Declin.	Longit. Declin.	Longit. Declin.
8 m 6	1 47 37 2	2 5 41 10	19 40 23 s 4	25 11 50 18 s 49	10 W 18 23 \$ 40
4 2 14	7 5 192	2 40 12	3 22 58	29 51 19 47	17 51 23 4
4 28	13 6 0 2	2 1 2	27 22 50 50 22 42	3 2 52 20 38	25 24 22 3 2 xx 56 20 38
4 43	19 0 41 2 25 7 21 2	- 1 - 2			10 28 18 52
and	M O's	0's		Observations	
ner	D Longit.	Declin.		Objervations	
Po		23 5 0	Clock before	re the Sun 4 m.	7 fec.
d, and		22 55	Saturn rifes	7 h. 19 m.	
2	3 13 7	22 49	Jupiter rifes	7 h. 56 m. mor	ning.
2day	4 14 8	22 43	Mars rifes	4 h. 20 m. morn	ing.
-0	E 15 9	22 36	Venus rifes	7 h. 51 m. mo	rning.
		1	Seven Stars	fouth at 8 h. 2	2 m, atternoon.
y air.	1 1 1	22 22	D. 1 .	1	
				5 h. 56 min.	
	1/1/			ed 20 minutes.	
	1	21 56	Saturn riles	6h. 58 m. mo	rning.
's Day		21 47	Jupiter rife	s 7 h. 37 m. mo	rning.
w M.		21 37	Mars rifes	4 h. 16 m. mor	ning.
Oğ			Venus fets	4 h. 14 m. after	rnoon.
	1 ,1 ,	21 17	01 1 1 5	1 0	
ls, in-	1 11 2			re the Sun 9 m.	59 lec.
frost.		2 20 54			
\$ \$	1 / /			Day is 8 h. 22 r	
				fouth at 7 h. 3	om, afternoon.
	1 / -	20 18			
	20 0 000 26			: 1 h. 48 m. m	orning.
		19 52			
		8 19 38	Day break	s at 5 h. 42 m.	
ate for	23 3 20			creased 56 min	
		19 10	Twilight e	nds at 6h. 20 n	n.
			Saturn rife	s at 6 h. 2 m. r	norning.
		2 18 40			
eo.				es at 6 h. 32 m.	
	28 8 34			at 4 h. 11 m. m	
	29 9 3	5 17 53	Venus sets	at 4 h. 53 m. al	ternoon.
	30 10 30	6 17 36			
	31 11 3	7/17 19			
0.00					

New Moon 1 da First Quarter 9 da Full Moon 17 da Last Quarter 24 da	y, at s	mornin	ig.	M Jupiter Venus D rifes fets 1 6m 16 5 a 9 7 5 57 5 27 13 5 38 5 47 19 5 19 6 7 25 5 6 6 26
W Holy Days, D o rises & sets	D rifes & fets	D's Lengit.	D's Declin.	Aspects and Weather
S AS. aft. Epiph. M Blafe To Sun rifes 7 18 F Sun fets 4 44 S E 5 S. aft. Epiph. M Sun rifes 7 11 To W Hil. Term ends The Son fets 4 55 F Valentine S E Septuage fima To Sun rifes 6 56 W Sun rifes 6 56 The Sun rifes 6 56	D fets 5 a 30 6 55 8 17 9 35 10 51 morn 0 7 1 22 2 37 3 47 4 48 5 38 6 15 6 42 7 1 D rifes 6 a 43 8 1 9 22 10 47 morn 0 15 1 44 3 9 4 24	8 ≈ 47 23 13 7 ★19 20 59 4 ¥ 14 17 5 29 34 11 ★ 47 23 47 5 II 41 17 32 29 26 11 ② 26 23 35 5 € 55 18 28 1 ♥ 15 14 14 27 26 10 ⇒ 51 24 26 8 ₱ 13 22 10 6 ₹ 15 20 28 4 ¥ 346	21 s 53 16 36 10 34 4 12 2 n 10 8 15 13 50 18 46 22 52 25 57 27 57 28 39 28 0 26 1 22 48 18 28 13 14 7 21 1 4 5 s 22 11 40 17 28 22 26 26 10 28 19 28 35 26 57	Purif. Candl. Shap air and frosty weather. * 5 \$ Wind and rain D in Apogeo. about this time. * 6 6 * 5 \$ \$ \$ Still wet and windy. Pr.Octavius booker. Adol. Fr. b. D in Perigeo. More moderate at the end.

and er

dì,

frofty

ain eo.

-					-				7		2					_	-
M.		aturn	-	_	Jupi	_			Ma		-		-	em			_
-	_	git. D		-	-	-			-	-	-		-				1.
1	8V	6 22							× 42	22 8			~ 1	5	16		23
7	8	42 22		19		100		20		23		26			13		59
13	9	48 22		21	42			28		23		71		6			19 30
25 1	0	20 22		22		21	39		Vy I	23		19		5			32
М	(o's	_ 0	's				(Obse	rvati	ons						
D	Lo	ngit.	Dec	lin.				- 3									
-	12	₩ 37	17 s	2	Clo	ck	befo	re t	he S	un I	4 m	. 5	fe	c.			
	13		16	45	Satu	ırn	rifes	at	5 h.	32	m.	mo	rn	in	g.		
	14	39	16	28	Jup	iter	rife	s a	t 6 h	. 10	m.	m	orn	in	g.		
A	15	40	16				ifes										
1 :4	16	41	15				fets										
6	17	41	15	33													
7	18	42	15		Seve	en !	Stars	So	uth	at 6	h. 7	m m	. a	fte	rnc	001	n.
8	19	43	14				9 h.										
	20		14	36	Day	s a	ie ii	icre	eafed	1 h	. 5	ı m	in.				
10	21	44	14	17							7						
11	22	45	13	57	\$ 8	gre	atest	elo	ng.	fron	0 0						
12	23	45	13	37													
13	24		13				rife										
14	25	47	12	57	Clo	ck	befo	re	the S	Sun	141	n.	36	fe	c.		
15	26	47	12	36	Jup	itei	rife	s 21	5 h	. 33	m.	m	orn	in	5.		
	27	48	12	15	Ma	rs r	iles	at	3 11.	54 1	m. I	moi	rni	ng			
17	28		11	54	Ven	us	fets	at	5 h.	321	m. :	afte	rno	00	n.		
18	29	48	II	33	0	ente	ers >	€ 4	h. 3	36 m	. al	ter	noc	on.			
19	0	X49		12	4												
20	1	49	IO				reak							-			
21	2	49	10				are i					on	n.				
22	1.0	50	10	7	Day	/ is	10	n. :	28 n	. 10	ng.	100					
E			9	45	Sev	en	Star	10	uth	at 5	h. 6	m	. a	fte	rne	001	n.
24	5	50	9	23						1.7							
25	6		9				rise										
26	17	51	8	38	Jup	ite	rife	es a	t 4 h	. 57	7 m	m	ori	nin	ig.		
27	8	51		16	Ma	rs 1	rifes	at	3 h.	461	m. 1	mon	nii	ng			
28		51	7	53	Ver	nus	fets	at	6 h.	36	m.	aft	ern	00	n.		
1																	
	1		1		1												

M C D Lo

I	Fir! Ful	w Moon 3 da ft Quarter 11 da l Moon 18 da ft Quarter 25 da	y, at 2 ly, at 9	morning at nigh	g. t,	M Jupiter Venus fets 1 4 m49 6 a 39 7 4 30 6 59 13 4 11 7 21 19 3 52 7 43 25 3 33 8 4
	W D	Holy Days, ⊙ rises & sets	D rifes & fets	D's Longit.	D's Declin.	Aspects and Weather
1 2 3 4 5 6 7 8 9 10 11 12 13	SEM TOW THE SEM TOW THE SEM	David Quinquagenma Shrove-Tuefa Afh-Wednefda Perpetua Quadra 1 S.in La Sun rifes 6 17 Sun fets 5 45 Ember Week	6 m 14 6 32) fets 7 a 12 8 30 9 48 11 6 morn 0 21 1 34 2 43 3 38	17 236 1 × 37 15 23 28 50 11 √ 58 24 47 70 17 19 32 1 II 35 13 30 25 23 7 5 17 19 17 10 28 13 54 26 36 9 7 36	18 5 48 13 5 6 49 0 23 5 n 56 11 50 17 8 21 37 25 9 27 31 28 40 28 28 26 57 24 9 20 11 15 15 9 31	Chad Sharp frofly weather for fome time. Sharp frofly weather for fome time. Sharp frofly weather for fome for fome for fome time.
19 20 21 22 23 24 25 26 27 28 29 30	WTH FSE MTUWTH FS	Equal D, and N. Benedict Sund, in Lent Annun, Lady-d Sun rifes 5 45 Sun fets 6 19 4, or Midl. Se	7 a 12 8 35 10 5 11 35 morn 1 5 2 22 3 22 4 28 4 47	6 = 31 20	3 s 19 9 51 15 59 21 19 25 28 28 1 28 44 27 33 24 38 20 18 14 57	D in Perigeo. Brisk winds, with hail and cold rain. 1 4 9

nd

ğ

weafome

deo.

d rain

eted.

Q

and ther.

eo. with

ğ

1_		urn			upit					ars			Ven	us		
				Lon					ngit.	Dec	lin.	Lon	git.	De	clip	1.
1 10				23 V					V9 44	23 8	41	24)	€ 14	3	S	30
711			20		50			9		23	32		42	0		24
3 11		22		25	55	21	9	13	56	23			9		n	
5 12	49	22		27		20		22	8	22		16	35			45
1		-		1	33		- 7/	1			-3	- 3	391	1 0	-	44
	O's		O' Dec					(Obse	rvat	ions					
11	×	51	7 8	30	Clo	ck l	oefo	re	the S	Sun	12 n	n. 3	g fe	c.	hv.	
EI	1	51	7	7	Sati	ırn	rise	s at	3 h.	. 53	m.	mo	rnin	g.		
3 1	2	52	6	44	0	ecli	pfed	, i	nvifi	ble.						
4 1		52	6	21	Jup	iter	rife	es a	t 4 h	. 40	m.	mo	ornii	ng.	12.00	
5 1		52	5	58	Ma	rs r	ises	at	3 h.	42 1	n. 1	mori	ning			
61	5	52	5	35					1	1		1017.		1		
71		52	5		Ver	nus	fets	at	6 h.	591	m. :	after	rnoo	n.	1	
81		51	4						uth						no	10
EI	-	51							26 n							
10 1		51							eased				1.			
11 2		51	3	38						,						
12 2	21	51	2	14	1											
13 2	22	50	3 2	51	Sat	urn	rife	es a	t 3 h	. 16	5 m.	me	orni	no		
14		50		27	Iui	ite	r rif	es a	at 4	h. 8	3 m.	mo	ornii	00.		
	24	50		2	Ma	rs I	ifes	at	3 h.	321	m.	mor	ning	0	- 15	
E		49		40	Clo	ock	bef	ore	the	Sun	8 m	1. 6	ı fec			
	26	49		16	1						-	.,)				
18		48				ecli	n (ce	. v	ifibl	e.						
	28	48	0	20	Sn	n is	eal	16	h. 1	m	mor	nin	0			
	29								5 h.							
21		47	11:0						7 h.							
1		4/	0						t 3							
E	1	46	0	42		y	ica	. 3 6	. 5	. 5	/ 111	•				
	1000	46					C.	1	onth	24	. 1.		m -	fte	rno	0
24	3	45				ven	Sta	15 1	outh	at	5 11.	201	ni. d	110	1110	U
145	4 5 6	4.4		53	1			0	lon	6-	***	_				
20	5	44				gre	eate	it e	long	. 110	in (0.				
27	0	4:			5			_		1				:-		
28		4							at 2							
29		4							at 3							
E	9	4							3 h							
131	110	4	0 4	1	4 V	enu	s le	ts a	t 8 h	1. 24	m.	at	nig	nt.		

M O Lor

Last Quarter 23 d	ay, at 1 ay, at	o night. 9 morni	ng.	M Jupiter Venus D rifes fets 1 3 m12 8 a 27 7 2 53 8 49 13 2 32 9 10 19 2 12 9 31 25 2 51 9 40
M W Holy Days, D D orifes and fets		D's Longit.	D's Declin.	Afpects and Weather
To Sun rifes 5 33 2 W Sun fets 6 29 3 Th Richard 4 F St. Ambrofe 5 S Old Lawy-Day 6 E 5 Sund in Lent 7 M 8 To Sun rifes 5 20 9 W Sun fets 6 42 10 Th 11 F Camb. T. ends 12 S Oxf. Ter. ends 12 S Oxf. Ter. ends 13 F Palm-Sunday 14 M 15 To Sun rifes 5 6 16 W Sun fets 6 56 17 Th Maundy-Thurf. 18 F Good-Friday 19 S Alphege 20 E Eafter-Day 19 S Alphege 21 M Eafter-Mond. 22 To Eafter-Mond. 22 To Eafter-Tuefd. 23 W St. George 24 Th 25 F St. Mark 26 S 27 E Low Sunday 28 M Sun rifes 4 42 29 To Sun fets 6 20 30 W Ox.&Ca.T. be.	8 51 10 10 11 26 morn 0 36 1 36 2 23 2 56 3 21 3 42 3 54 4 7 4 19 4 31 Drifes 9 a 18 10 51 morn 0 16 1 24 2 10 2 41 3 16	28 +4 15 9 27 21 9 11 24 21 19 3 5 11 15 5 27 4 9 5 14 21 39 4 17 29 0 22 59 14 52 29 7 13 11 38 28 20 13 2 3 27 42 12 VS11 26 26 10 24 24 5 7 36 10 24 24 5 7 36 10 24 24 5 7 36 16 21	21 45 17 13 11 51 5 49 0 \$ 40 7 18 13 44 19 32 24 13 27 23 28 39 27 55 25 21 21 19 16 12 10 24 4 15	Fair and very plea- fant spring wea. 3 4 3 ther. D in Apogeo. Warm winds, and gentle showers. ** 4 \$ Winds, but fair so the most part. Now about expect wet, and windy Proceedings.

nd

0.

and

er.

pect

ul	Satu	rn			Jup	iter			M	ars			Ven	us		-
	ongit.	_	-	Lo			in.	Lon	git.	Dec	lin.			_	chi	1.
II	2VP23	3.2	8 14	281	V 49	20 S	37	261	y 55	21	\$ 43		36	12	n	4
7 1				29	36	20				21		9		14		45
0 1					: '	20	13			1		24		17		12 24
5/1					7	20	8	13		18	18			21		18
M	⊙'s Longi	t.	O' Decl					(Obfe	rvat	ions					
1	1173	9	4 n	37	Clo	ck be	ef. t	he S	un	3m.	56 fe	ec. O	ecl	ip.i	nv	i
		8	5	0	Satu	ırn r	ises	at :	2 h.	8 m	1. n	orni	ng.			
3		7	5	23	Jup	iter	rife	s at	3 h	. 6	m.	morr	ning	3.		
		6	5	46	Mar	s rif	es a	t 3	h. (m.	mo	rnin	g.			
		5	6	8	Ven	us fo	ets a	at 8	h.	421	m. 0	eveni	ng.			
		4	6	1		en Si	tars	lou	th :	zh.	33 n	n. af	teri	100	n.	
		3	6	54								17.00				
		;2	7		Day											
		0	7	39	Day	s are	2 111	crea	ied	5 h	• 43	mir	1.			
		29		1	Sun	ıs e	ait	6 h.	25	m.	mor	ning				
		8	8		Day											
		:6		45	Twi	iligh	ten	lds	at 8	n.	561	m.				
		25	9		Satu	irn r	nes	at	In.	30	m.	mor	nın	g.		
1.74		4	9	28	Ola	-l- :-			h = 6	2						
	-6	2	9	7	Clo	CK 1S	WI	tn t	ne .	sun.						
11	1.50	11	10	11	T		::		- 1	1	***	-		~		
	13	8	10									mor		g.		
		7	11	55	Van	ne C	ete d	1 0	h	2111	m 4	ornii eveni	in or			
2	29 I		11									orni				
			11		0 0	nici	. 0	2,	>	- 411		GIHI	2.			
2			12	55												
3			12	15	Day	is	141	1. 2	o m	. 10	no.					
4	4	-	12	55	Day	sare	in	crea	fed	6 h.	44	min	1			
		- N	13		Day											
6	5	- 1	13	34	Lay	2110		-								
			13	54	Satu	rn r	ifes	at o	b.	26 r	n. r	norn	ing			
2 3 4 56 6 8 9 9	7		14									morn				
9	9	0										ornir				
b		- 4	14									nigh				
1				73						3	1.11					

M W Holy Days, D rifes D's D's Afpects and Weather 1 14 St. Phil. & Jam. D fets 11 17 18 n 38 Fair and pleasant
S Inv. of Cross 10 28 5 1137 25 58 A O B

WII	VG.			May, 1783.
M	Satu	rn	1	Jupiter Mars Venus
D Lo	ng. 1	Declin	1.11	ong. Declin. Long. Declin. Long. Declin.
1 12½ 7 12 13 12 19 12 25 11	739 2 31 2 21 2 7 2 50 2	2 8 1 2 1 2 1 2 1 2 1	3 4 5 6 8	1 m 49 20 8 3 17 m 18 17 8 14 9 11 10 22 n 51 2 18 20 0 21 19 16 8 16 25 24 1 2 20 19 58 25 18 14 58 23 37 24 47 2 24 19 58 29 14 13 45 0 47 25 8 2 22 20 0 3 10 12 31 7 55 25 4
		Sur Decl		Observations
-	_	115 n	_	Clock after the Sun 3 min. 56 fec.
211	10.18	15	26	Saturn rifes at o h. 18 min. morning
3 12		15		Jupiter rifes at 1 h. 22 min. morning
E 13	-	16		Mars rifes at 2 h. 8 min. morning
514	48	16	18	Venus fets at 10 h. 17 min. at night
615	46	16	35	Seven Stars South at o h. 38 m. afternoon
716		16	52	
817	42			Day is 15 hours 12 minutes long
918		17	24	Days are increased 7 hours 33 minutes
1019		17	40	
E 20	36	17	55	Saturn rifes at 11 h. 43 min. at night
12 21	34	18	11	Jupiter rifes at o h. 49 min. morning
13 22	32	18	26	Mars rifes at 1 h. 49 min. morning
14 23		18	40	Venus sets at 10 h. 36 min. at night
15 24	27	18	54	Sun is East 7 h. 3 min. morning
16 25		19	8	Clock after the Sun 4 minutes
17 26	23	19	22	
E 27	-	19	35	Day breaks at o h. 54 minutes
1928	18	19	48	Twilight ends at 11 h. 20 min.
20 29	16	20	1	
21 0	1113	20	13	Sun enters 11 6 h. 30 min. morning
22 1	11	20	25	Seven Stars South at 11 h. 38 m. forenoon
23 2	8	20	37	Day is 15 hours 56 minutes long
24 3	6	20	48	
E 4	4	20	59	All Day, or Twilight, till July the 23d.
16 5	1	21		Days are increased 8 hours 20 minutes
27 5	59	21	20	
28 6	56	21	30	Saturn rifes at 10 h. 32 min. at night
29 7		21	39	Jupiter rises at 11 h. 38 min. at night
30 8	51	21		Mars rifes at 1 h. 6 min. morning
31 9	49	21	57	Venus fets at 10 h. 58 min. at night

enus ets a 6 b 22 c 34 c 43 c 52 and r and r Therefore, and a second of the second of the

ğ

weaat not

ğ ç

geo.
n
requent
about
d
4

ie.

Q Ref

iets

a 28 17

30 M

52514 28

6 26

52 the end.

UNE XXX Days.

IN

Lo

II

10

10

19

00

1

2

3

4 56

WI	NG.		June, 1783.
M	Satu	rn	Jupiter Mars Venus
DI	ong.	Decl. IL	ong. Decl. Long. Declin Long. Decl.
1 1	11/28/2	the same of the same	m16 208 4 7 × 39 11 8 3 160011 24 n 26
7 3	1 5 2	2 23 2	2 20 9 11 25 9 47 23 14 23 28
13 1	0 42 2	2 25	38 20 15 15 7 8 32 0814 22 7
97.5			1 10 20 22 18 43 7 18 7 10 20 25 36 20 30 22 11 6 7 14 3 18 25
1000	Sun's	Sun's	
	The state of the s	Declin.	Observations
100			Clock after the Sun 2 min. 39 fec.
2 1		22 1	Saturn rises at 10 h. 11 min. at night
3-1	THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLUM	22 21	
4			Mars rifes at 0 h. 50 min. morning
		22 35	
		22 41	
7		22 47	
É		22 53	
9	18 25	1 2 "	Seven Stars fouth 10 h. 25 min. forenoon
0		23	Day 16 hours 26 minutes long
		23	, and the manual sound
	21 17		Saturn rifes at 9 h. 27 min. evening
			Jupiter rifes at 10 h. 36 min. evening
		23 18	
E			Clock and Sun are together
16	25 6		Mars rifes at o h. 15 min. morning
101	2	1-3	Venus fets at 10 h. 47 min. at night
1.6	27 I		
			Days are increased 8 h. 51 min. which i
	- 0	23 2	
1	29 52		Sun enters 25 3 h. 12 min. afternoon
B	00050	23 2	8 Longest day is 16 hours 34 minutes
3		THE RESERVE OF THE PARTY OF	
4	2 4		Seven Stars fouth at 9 h. 21 m. forenoon
5	3 4	23 2	[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]
3 4 5 6 7 8 E	4 3	8 23 2	Sun is east at 7 h. 20 min. morning
7	5 3	6 23 2	
8	5 3	3 23 1	8 Days are decreased 3 minutes
E	7 3		Day is 16 hours 30 minutes long
0		- 1	2

o Jul	LY XXXI Days.	in the	W
Lun	nations	M Jupiter Ven D rifes fet	MI
Laft Quarter 21ft	day, at 4 afternoon day, at 7 morning day, at 5 morning day, at 8 morning	7 8 51 10 13 8 25 9 19 7 58 9 25 fets 9	D17
	D rises Moon's Moon's & sets Longit. Declin.		3 M
T Cam. Comm. W Vifit. V. Mar. T Dog-daysbeg. F Cam. T. ends S S. aft. Trin. M Tho. à Becket T GW Trin. T. ends T Sun rifes 3 5 1 F Sun fets 8 8 Oxford Act S S. aft. Trin. M Tho. Swithin S W Sun rifes 3 58	9 a 51 28 25 9 24 n 17 10 9 10 0 56 20 38 10 23 22 59 16 8 10 35 5 10 10 55 10 46 17 32 5 13 10 55 0 11 0 8 49 11 7 13 9 6 58 11 21 26 31 13 0 11 39 10 10 18 36 11 39 10 10 18 36 11 39 10 10 18 36 11 39 10 10 18 36 11 49 9 24 35 23 21 0 6 9 \$\frac{1}{2}\$ 17 26 46 0 47 24 19 28 24 1 49 9 33 27 54 D rifes 24 49 25 19 9 a 21 9 56 20 57 9 38 24 43 15 22	Hot and fultry perhaps some T.S.Ma. 6 0 thunder shower \$24 8 Brisk winds, a p in Perigeo some showers.	DI 3 3 4 5 6 7 8 9 10 11 12 12 12 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16
Sun fets 8 1 Sun fets 7 44 Sun fets 7 44	9 52 9 % 6 9 5 10 4 22 59 2 33 10 14 6 7 25 3 n 53 10 26 19 25 9 56 10 40 2 8 3 15 25 10 57 14 24 20 9 11 19 26 31 23 58 11 51 8 11 30 26 42 morn. 20 23 28 13 0 36 29515 28 27 1 32 14 7 27 21 2 37 26 2 25 1 5 D fets 8 \$\mathcal{Q}\$1 21 34	Margar. 80 Hot, and very dry weather, fome time.	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

W	INC				July,	1783.	SVA		21
1	S	atu	rn	1	Jupiter	Ma	rs	Ve	nus
DI	ong	11	ecl.	1Lo	ng. Decl.	Long.	Decl.	Long.	Decl.
7	8 5 8 3 8	5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3 3	4 29	757 20 8 40 14 20 50 30 20 59 44 21 9 57 21 19		4 * 57 3 51 2 50 1 53 1 3	20\$\cdot\sigma^2\c	16 n 10 13 41 11 2 8 15
M	Sun			n's clin.		Observ	ation	S	0 4 8
11	955	25	23 1	n 8	Clock befo	re the S	iun 3 n	nin. 18	lec.
2 1		22	23	4			Les		
3	II	19	22	59	Day is 16	hours 2	6 minu	tes long	
	12	16	22	.54	Days are	ccrealed	9 mi	nutes	
~ I	13		22	45	0 . 0			of the same	
	14		22		Seven Star				
	15	1111111	22		Saturn fets				
- 1	16	5	M	30	Jupiter rife	s at 8 h	· 47 m	in. eve	ning
	17	4.35	22		Mars rifes				
- 4	17		22		Venus fets Sun is due				ngnt
- 4	18	57			oun is due	Call at	,	5 mm.	
- 1	19		22	0	Day is 16	hours .	o min	ites lone	NA WALL
- I	21	51	21		Days are				
1	22		21	33	Days are c	CCICAIC	20 11	initates	
	23	43	1		Clock bef	ore the	Sup =	min 25	fec.
	24		21	13			3	3:	
	25		21	3	Saturn fets	at 2 h.	42 mi	n. morn	ing
-	26		20		Jupiter rife	es at 7 l	1. 58 m	in. ever	ning
-	27		20		Mars rifes				
	28	-	20	20	Venus fets	at 9 h.	36 mi	n. eveni	ng
22	29		20	18					
23			20	6	Sun enters	Rzh	. z mir	. morn	ing
24			19						
25	1		8 19			A Elong	. from	0	
26	3		6 19	27		AVEY			
E		1	3 19	14	Day brea	ks at ol	1. 57 1	min.	
28	1 -		1 19		Day is 15	hours	z min	utes long	3
29			8 18						
30	7	12	6 18		Twilight	ends at	10 h.	41 min.	
31	1 8		3118	3 1	7				

10 at 10 g g g sts and ther

fultry ome of O hower

ds, a geo wers.

8 h

80 very her,

D in A

show end.

22	Au	GUST	XXX	Days	n i	1
44.0.	Lui	nations	3		M Jupiter D fets	Venue M fets D
Ful Lai Ne	th Quarter 5th Il Moon 12th It Quarter 19th w Moon 27th	day, at	2 aftern	oon ght	1 3m11 7 2 44 13 2 18 19 1 52 25 1 28	9 a 7 -8 50 7 8 33 15 19
M W D D	Holy-Days o rifes & fets		Moon's Longit.		Aspects	and M
FSEMTWTFS	Lammas 7 S. aft. Trin. Sun rifes 4 24 Sun fets 7 34 Transfigurat. Name of Jefus Sun rifes 4 32 8 S. aft. Trin. Prs. Brunf. bo. Pr. of Wales b. Sun fets 7 19 Sun rifes 4 43 Pr. Fred. bo. 9 S. aft. Trin. Sun rifes 4 50 Sun fets 7 8 Pr. W. Hen. b.	8 a 5 l 9 l 9 l 9 26 9 4 l 10 38 11 29 morn 0 42 2 l 3 prifes 7 a 58 8 l 11 8 23 8 34 8 48 9 3 9 24 9 52 morn 0 30 1 1 2 9 morn 0 4 2 1 3 1 2 9 morn 0 4 2 2 1 3 1 2 9 morn 0 3 2 4 9 9 5 2 2 1 3 1 2 9 morn 0 3 0 2 4 9 9 5 2 2 1 3 1 2 9 morn 0 3 0 2 4 9 9 5 2 2 1 3 1 2 9 morn 0 3 0 2 4 9 5 2 5 5 5 1 2 9 morn 0 3 0 2 5 1 9 morn 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	14 m 40 27 13 10 0 0 23 4 6 m 27 20 10 4 16 18 42 3 b 26 18 21 3 2 2 2 18 15 2 X 55 17 16 1 Y 11 14 41 27 46 10 8 28 22 52 5 11 0 16 59 28 52 10 43 22 37 4 \$ 36 16 43	6 n 2 9 0 2 6 5 s 4 6 11 4 6 17 17 22 11 25 57 28 27 26 42 23 3 17 54 11 47 5 10 1 n 3 0 7 54 1 1 8 53 2 8 27 2 8 28 2 8 27 5 10 1 8 53 2 8 28 2	Wind, but * \$ \$ fair. D in Peri St. Laure Dog-days O. Lam. D \$ Some show about this Some show about this	geo mostly geo nce end a d d d d d d d d d d d d d d d d d d
30 S	St. Augustine Beh. J. Bapt.	7 26	24 5	7 54 1 54 4 s 17	+	

77	ING.			Aug	uft	. 1	783	2.	4	185			23
M	Satu	rn	1	Jupiter		1	M.		. 1		V	enus	
D	Long.	Decl	. L	ong. De	ecl.	Lo	ng. I	De	cl.	Lo	ng.	De	cl.
I	18181:			19 4 21 1	-	-	C43 [0	13	24	29		n 58
7	. 30		5 25	A world by the second of the	39	11	35	1.50	122	6	34	0	s 58
13			8 24		53	13	4 7	0	48	12	24	3	5 ² 4 ²
25	6 18		19 23		117	14	42	I	14		19	9	25
M	Sun's		in's	4.7	()h	ferv	ati	one				
D	Longit.	-											
1,		18 r	1 2	Clock b	efor	e th	e Su	in 5	mi	1. 5	4 fee	conc	S
2		17	46										14
E	33		31	Saturn f									3.7
	11 53		15	Jupiter									123
5	12 50	16	59	Mars ri									di.
		16	42	Venus f	ets a	8 11	n. 5	3 n	nin.	eve	ning	5	37.
7	14 45	16	26	Come C		c			h .			-	
		16	9	Seven S	tars	10u	th a	. 0	11.	25.11	1. III	Orn	mg
E		15	51	Day is	. h	01170			nute	10	no		8
11		15	34	Days an								nute	90
		14	58	Days at	C LLC	CIC	aicu		nou	40			
		14	40	2 grea	teff	Elo	no.	fron	0				
		14	22	+ 8.00						•			
		14	3	Saturn	lets	at o	h	161	min	. me	ornir	19	7
		13	44	Jupiter									
E	7	13	25	Mars ri	fes a	at o	h. c	mi	n. e	ven	ing	,	
18		13	6			,							
19	26 17		46	Clock l	efor	e th	ne S	un	3 m	in.	17 fe	con	ds
20	27 15	12	26					100					
	28 13	12	7	Venus	lets	at 8	h.	101	min.	eve	ening	g	
	29 11	11	46	Seven S	tars	for	ith a	it 5	h. :	30 m	in.	mor	ning
23	07 9	11	26	Sun ent	ers	啊!	3 h.	211	min	. mo	ornir	g	
E	1 7	II	6							100			1300
25		10	45	Day is	13	hou	rs 5	8 m	inu	tes l	ong		
26	3 3	10	24										
27	4 1		3	Sun ecl									
28	1 37		42	Days a	re d	decr	eafe	d 2	ho	urs	47 I	nini	ites
29	5 57		21	n .		3							
30 E	6 55	1 1 1 1	59	Day br									
-	7 53	8	37	Clock a	and i	Sun	are	tog	ethe	er	7	4 49	

moftly

eo ce nd

ers ime.

ıft

eo

re-

WIN

DLo

1:6

7 6

13 6

19 6

25 6

DL

3 10

411

5 1:

14

81

911

101

111

12 1

13 2

E 2

15 2

16 2

17 2

19 2

20 2

E

22

23

24

25

27 E

29

30

MI S

8

M

M Saturn Jupiter Mars Venus D Long. Decl. Long. Decl. Long. Decl. 1 607 9 22 8 50 25 10 22 8 3 14 77 44 12 13 23 20 0 12 8 24 7 6 6 62 5 51 22 53 22 6 14 11 1 2 27 20 14 43 13 6 7 22 51 22 44 22 8 13 11 0 44 11 11 6 47 13 6 7 10 2 5 2 22 44 12 2 9 11 46 0 20 3 54 18 30 15 6 18 22 5 122 45 12 2 8 10 4 0 8 9 5 46 19 47 M Sun's Sun's D Longit. Declin. 18 mp 51 8 n 16 Clock after the Sun omin. 14 fec. 2 9 49 7 54 3 10 48 7 32 Saturn fets at 11 h. 32 min. foreacon 4 11 46 7 10 Jupiter fets at 0 h. 48 min. morning 5 12 44 6 47 Mars rifes at 7 h. 53 min. evening 8 15 39 5 40 9 16 37 5 17 10 17 36 4 54 11 18 34 4 32 12 19 32 4 9 13 20 31 3 46 14 21 29 3 23 15 22 28 3 0 16 22 28 3 0 16 22 28 3 0 17 24 25 2 13 18 25 24 1 50 Saturn fets at 10 h. 35 min. morning 17 24 25 2 13 18 25 24 1 50 Saturn fets at 10 h. 35 min. morning 18 28 20 0 39 22 29 19 0 16 Saturn fets at 10 h. 35 min. morning 23 0 16 23 1 26 Saturn fets at 10 h. 35 min. morning 24 1 17 0 31 Jupiter fets at 11 h. 46 min. at night 25 2 16 0 54 Sun enters	Wi	N C.		S	eptem	ber,	178	3.			25
1 6 10 9 9 22 8 50 23 10 10 22 8 3 14 14 1 1 1 2 27 20 14 43 13 6 7 22 53 122 53 122 6 14 11 1 2 27 20 14 43 13 6 7 22 52 122 44 122 9 11 0 44 11 1 1 6 47 18 6 10 22 52 122 44 122 9 11 4 6 0 20 3 54 18 30 25 6 18 22 51 22 45 122 8 10 4 0 8 9 5 46 19 47 18 10 48 7 32 Saturn fets at 11 h. 32 min. forenoon Jupiter fets at 0 h. 48 min. morning Mars rifes at 7 h. 53 min. evening Wenus fets at 7 h. 20 min. evening Seven Stars fouth at 4 h 28 m. morning Moon eclipfed, vifible 1 18 14 4 1 6 2 8 15 39 5 40 Seven Stars fouth at 4 h 28 m. morning Moon eclipfed, vifible 1 18 34 4 32 Days are decreased 3 hours 48 minutes 1 2 2 3 3 0 Clock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. 1 2 4 2 5 2 13 18 2 5 2 1 1 50 Day breaks at 3 h. 50 min. 1 2 8 2 0 0 39 22 29 1 9 0 16 Seven Stars fouth at 3 h. 39 m. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun eclipsed, invisible 1 2 4 1 17 0 31 Day is 11 hours 40 min. afternoon 2 5 2 16 0 5 4	M	Satu	rn	1	Jupiter		Mars	Van 1	1	Venus	
1 6 10 9 9 22 8 50 23 10 10 22 8 3 14 14 1 1 1 2 27 20 14 43 13 6 7 22 53 122 53 122 6 14 11 1 2 27 20 14 43 13 6 7 22 52 122 44 122 9 11 0 44 11 1 1 6 47 18 6 10 22 52 122 44 122 9 11 4 6 0 20 3 54 18 30 25 6 18 22 51 22 45 122 8 10 4 0 8 9 5 46 19 47 18 10 48 7 32 Saturn fets at 11 h. 32 min. forenoon Jupiter fets at 0 h. 48 min. morning Mars rifes at 7 h. 53 min. evening Wenus fets at 7 h. 20 min. evening Seven Stars fouth at 4 h 28 m. morning Moon eclipfed, vifible 1 18 14 4 1 6 2 8 15 39 5 40 Seven Stars fouth at 4 h 28 m. morning Moon eclipfed, vifible 1 18 34 4 32 Days are decreased 3 hours 48 minutes 1 2 2 3 3 0 Clock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. 1 2 4 2 5 2 13 18 2 5 2 1 1 50 Day breaks at 3 h. 50 min. 1 2 8 2 0 0 39 22 29 1 9 0 16 Seven Stars fouth at 3 h. 39 m. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun enters 4 h. 49 min. morning Day and night each 12 hours long Sun eclipsed, invisible 1 2 4 1 17 0 31 Day is 11 hours 40 min. afternoon 2 5 2 16 0 5 4	DI	Long.	Decl.	Lo	ng. Dec	I. Lo	1g. /L	ecl.	Long	g. D	ecl.
13 6 7 22 51 22 44 122 8 13 11 0 44 1M 1 16 47 18 6 10 12 51 22 41 122 9 11 46 0 20 3 54 18 30 25 6 18 22 51 22 45 122 8 10 4 0 8 9 5 46 19 47 18 30			-	- * comp	- Commission of the last of th	Manager personners		-	-		-
18	10									1 2	
18 12 2 3 22 4 5 2 8 10 4 0 5 5 46 19 47	1.3					Charles and the	A 100 MILES				
D Longit. Declin. 8 mp 51	1.2			200		-			1 -		W. L. E. L.
1 8mg51 8 n 16 Clock after the Sun omin. 14 fec. 2 9 49 7 54 3 10 48 7 32 Saturn fets at 11 h. 32 min. forencon 4 1 46 7 10 Jupiter fets at 0 h. 48 min. morning 5 12 44 6 47 Mars rifes at 7 h. 53 min. evening 6 13 42 6 25 8 15 39 5 40 9 16 37 5 17 10 17 36 4 54 11 18 34 4 32 12 19 33 4 9 13 20 31 3 46 14 18 34 4 32 15 12 28 3 0 16 23 27 2 36 17 24 25 2 13 18 25 24 1 50 19 26 23 1 26 17 24 25 2 13 18 25 24 1 50 19 26 23 1 26 20 27 21 1 3 21 29 19 0 16 22 29 19 0 16 23 0 - 18 0 5 24 1 17 0 31 25 2 16 0 54 26 3 14 1 17 27 4 13 1 41 E 5 12 2 2 28 Day is 11 hours 40 minutes long Day is 12 hours 48 minutes Day is 12 h						Oh	(erva	tion	2		0.18
2 9 49 7 54 310 48 7 32 32 32 34 6 47 6 13 42 6 25 8 15 39 5 40 40 40 40 40 40 40	D	Longit.			22 (4)	SUPPLIES.	A BARRAN	All Lines		32.00	317
3 10 48 7 32 Saturn fets at 11 h. 32 min. forenoon 4 11 46 7 10 5 12 44 6 47 6 13 42 6 25 E 14 41 6 2 8 15 39 5 40 9 16 37 5 17 10 17 36 4 54 11 18 34 4 32 12 19 33 4 9 13 20 31 3 46 E 21 29 3 23 15 22 28 3 0 16 23 27 2 36 17 24 25 1 30 19 26 23 1 26 20 27 21 1 3 E 28 20 0 39 22 29 19 0 16 23 0 ← 18 20 0 39 22 29 19 0 16 23 0 ← 18 0 5 7 24 1 17 0 31 B 28 20 0 39 22 29 19 0 16 23 0 ← 18 0 5 7 24 1 17 0 31 Day breaks at 3 h. 50 min. Saturn fets at 11 h. 32 min. forenoon Jupiter fets at 11 h. 32 min. forenoon Jupiter fets at 11 h. 32 min. forenoon Jupiter fets at 3 h. 50 min. Saturn fets at 10 h. 35 min. morning Jupiter fets at 11 h. 46 min. at night Seven Stars fouth at 3 h. 39 m. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipfed, invisible Venus fets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	1	87751	8 n	1.000	Clock af	ter the	Sun	o min	1. 14	fec.	
4 11 46 7 10 Jupiter fets at 0 h. 48 min. morning Mars rifes at 7 h. 53 min. evening Venus fets at 7 h. 20 min. evening Seven Stars fouth at 4 h 28 m. morning Moon eclipfed, vifible Day is 12 hours 48 minutes long Days are decreased 3 hours 48 minutes Day is 12 hours 48 minutes Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. Olock after the Sun 4 minutes long Olock af	100				Catura C	***	. 1		:- C		10
Solution Solution	-										2 13
6 13 42 6 25 Venus fets at 7 h. 20 min. evening 8 14 41 6 2 8 15 39 5 40 9 16 37 5 17 10 17 36 4 54 11 18 34 4 32 12 19 33 4 9 13 20 31 3 46 E 21 29 3 23 15 22 28 3 0 16 23 27 2 36 17 24 25 2 13 18 25 24 1 50 19 26 23 1 26 20 27 21 1 3 E 28 20 0 39 22 29 19 0 16 23 0											7 1
E 14 41 6 2 8 15 39 5 40 9 16 37 5 17 10 17 36 4 54 11 18 34 4 32 12 19 33 4 9 13 20 31 3 46 E 21 29 3 23 15 22 28 3 0 16 23 27 2 36 17 24 25 2 13 18 25 24 1 50 19 26 23 1 26 19 26 23 1 26 20 27 21 1 3 B 28 20 0 39 22 29 19 0 16 23 0 - 18 0 8 24 1 17 0 31 25 2 16 0 54 26 3 14 1 17 27 4 13 1 41 E 5 12 2 4 Day is 12 hours 48 minutes long Days are decreased 3 hours 48 minutes Day breaks at 3 h. 50 min. Saturn sets at 10 h. 35 min. morning Jupiter sets at 11 h. 46 min. at night Seven Stars south at 3 h. 39 m. morning Sun enters - 4 h. 49 min. morning Day and night each 12 hours long Mars rises at 6 h. 31 min. evening Sun eclipsed, invisible Venus sets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	15	12 44	1								17-13
S 15 39 5 40 Seven Stars fouth at 4 h 28 m. morning 916 37 5 17 10 17 36 4 54 11 18 34 4 32 12 19 33 4 9 Day is 12 hours 48 minutes long Days are decreased 3 hours 48 minutes E 21 29 3 23 23 15 22 28 3 0 Clock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. O 10 26 23 1 30 Saturn fets at 10 h. 35 min. morning Day breaks at 3 h. 50 min. Saturn fets at 11 h. 46 min. at night Seven Stars fouth at 3 h. 39 m. morning Sun enters 24 h. 49 min. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipsed, invisible Venus sets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long Day is 12 hours 40 minutes long Day is 12 hours 40 minutes long Day is 12 hours 40 minutes Day	F.	13 42		-	, chao i					8	1.15
916 37 5 17 1017 36 4 54 1118 34 4 32 1219 33 4 9 1320 31 3 46 E 21 29 3 23 1522 28 3 0 1623 27 2 36 1724 25 2 13 1825 24 1 50 1926 23 1 26 2027 21 1 3 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 22 29 19 0 16 E 28 20 0 39 24 1 17 0 31 E 28 20 0 39 Day breaks at 3 h. 50 min. Seven Stars fouth at 3 h. 39 m. morning Sun enters 2 4 h. 49 min. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipfed, invifible Venus fets at 5 h. 59 min. afternoon Day is 12 hours 40 minutes long Venus fets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	8				Seven S	ars fo	uth at	4 h	28 n	n. mor	ning
10 17 36 4 54 Moon eclipfed, visible 11 18 34 4 32 Day is 12 hours 48 minutes long Days are decreased 3 hours 48 minutes E 21 29 3 23 Clock after the Sun 4 min. 56 fec. Sun is due East at 7 h. 12 min. 17 24 25 2 13 18 25 24 1 50 Day breaks at 3 h. 50 min. Saturn fets at 10 h. 35 min. morning Day breaks at 11 h. 46 min. at night E 28 20 20 21 3 Jupiter fets at 11 h. 46 min. at night Seven Stars south at 3 h. 39 m. morning Sun enters		2								120	
11 18 34 4 32 12 19 33 4 9 13 20 31 3 46 E 21 29 3 23 15 22 28 3 0 16 23 27 2 36 17 24 25 2 13 18 25 24 1 50 19 26 23 1 26 20 27 21 1 3 E 28 20 0 39 22 29 19 0 16 23 0 18 0 8 7 24 1 17 0 31 25 2 16 0 54 26 3 14 1 17 27 4 13 1 41 E 5 12 2 4 28 Day is 12 hours 48 minutes long Days are decreased 3 hours 48 minutes Clock after the Sun 4 min. 56 sec. Sun is due East at 7 h. 12 min. Day breaks at 3 h. 50 min. Saturn fets at 10 h. 35 min. morning Jupiter sets at 11 h. 46 min. at night Seven Stars south at 3 h. 39 m. morning Sun enters 2 4 h. 49 min. morning Day and night each 12 hours long Mars rises at 6 h. 31 min. evening Sun eclipsed, invisible Venus sets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long				0.00	Moon e	clipfed	, vifib	le			
Day is 12 hours 48 minutes long Days are decreased 3 hours 48 minutes E 21 29 3 23 15 22 28 3 0 Clock after the Sun 4 min. 56 sec. Sun is due East at 7 h. 12 min. Clock after the Sun 4 min. 56 sec. Sun is due East at 7 h. 12 min. Day breaks at 3 h. 50 min. Day breaks at 3 h. 50 min. Day breaks at 10 h. 35 min. morning Day breaks at 11 h. 46 min. at night Seven Stars fouth at 3 h. 39 m. morning Sun enters 2 4 h. 49 min. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Mars rifes at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long Day is 11 hours 40 minutes long											
E 21 29 3 23 15 22 28 3 0 Clock after the Sun 4 min. 56 fec. 16 23 27 2 36 Sun is due East at 7 h. 12 min. 17 24 25 2 13 18 25 24 1 50 Day breaks at 3 h. 50 min. 19 26 23 1 26 Saturn fets at 10 h. 35 min. morning 20 27 21 1 3 Lupiter fets at 11 h. 46 min. at night E 28 20 0 39 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning Sun enters 2 4 h. 49 min. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipfed, invisible Venus fets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	12			9							
15 22 28 3 0 Clock after the Sun 4 min. 56 fec. 16 23 27 2 36 Sun is due East at 7 h. 12 min. 17 24 25 2 13 18 25 24 1 50 Day breaks at 3 h. 50 min. Saturn fets at 10 h. 35 min. morning 20 27 21 1 3 Jupiter fets at 11 h. 46 min. at night E 28 20 0 39 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning Sun enters 2 4 h. 49 min. morning Sun enters 2 4 h. 49 min. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipsed, invisible Venus fets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	len.				Days ar	e decr	eased	3 ho	urs 48	minu	tes
16 23 27 2 36 Sun is due East at 7 h. 12 min. 17 24 25 2 13 18 25 24 1 50 Day breaks at 3 h. 50 min. 19 26 23 1 26 Saturn fets at 10 h. 35 min. morning 20 27 21 1 3 E 28 20 0 39 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning Sun enters ≥ 4 h. 49 min. morning Sun enters ≥ 4 h. 49 min. morning Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipsed, invisible Venus sets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	100.0			-	Class	C 1				66-	
17 24 25 2 13 18 25 24 1 50 Day breaks at 3 h. 50 min. 19 26 23 1 26 Saturn fets at 10 h. 35 min. morning 20 27 21 1 3 Jupiter fets at 11 h. 46 min. at night E 28 20 0 39 Seven Stars fouth at 3 h. 39 m. morning 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning 23 0 18 0 5 7 Sun enters 2 4 h. 49 min. morning 24 1 17 0 31 Day and night each 12 hours long 25 2 16 0 54 Mars rifes at 6 h. 31 min. evening 26 3 14 1 17 Sun eclipfed, invisible 27 4 13 1 41 E 5 12 2 4 Venus fets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long		1	1 -	77							
18 25 24 1 50 Day breaks at 3 h. 50 min. 19 26 23 1 26 Saturn fets at 10 h. 35 min. morning 20 27 21 1 3 Jupiter fets at 11 h. 46 min. at night E 28 20 0 39 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning 23 0 18 0 5 7 Sun enters 2 4 h. 49 min. morning 24 1 17 0 31 Day and night each 12 hours long 25 2 16 0 54 Mars rifes at 6 h. 31 min. evening 26 3 14 1 17 Sun eclipfed, invisible 27 4 13 1 41 E 5 12 2 4 Venus fets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long		1			oun is	iuc La	in at	/ 11.	1 Z IIII	11.	
19 26 23 1 26 Saturn fets at 10 h. 35 min. morning 20 27 21 1 3 Jupiter fets at 11 h. 46 min. at night E 28 20 0 39 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning C 3 0 18 0 5 7 Sun enters 2 4 h. 49 min. morning C 4 1 17 0 31 Day and night each 12 hours long C 5 2 16 0 54 Mars rifes at 6 h. 31 min. evening C 6 3 14 1 17 Sun eclipfed, invisible C 7 4 13 1 41 C 5 12 2 4 Venus fets at 5 h. 59 min. afternoon C 9 6 12 2 28 Day is 11 hours 40 minutes long					Day br	eaks a	t 2 h.	50 n	nin.		
20 27 21 1 3 Jupiter fets at 11 h. 46 min. at night		1 2			Saturn	fets at	10 h.	351	min. r	norning	2
E 28 20 0 39 22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning 23 0 18 0 5 7 Sun enters 4 h. 49 min. morning 24 1 17 0 31 25 2 16 0 54 Mars rifes at 6 h. 31 min. evening 26 3 14 1 17 Sun eclipfed, invisible 27 4 13 1 41 E 5 12 2 4 Venus sets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long			-								
22 29 19 0 16 Seven Stars fouth at 3 h. 39 m. morning 23 02 18 05 7 Sun enters 2 4 h. 49 min. morning Day and night each 12 hours long Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipfed, invisible Venus sets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long	E		0 0					18.			
24 1 17 0 31 Day and night each 12 hours long Mars rifes at 6 h. 31 min. evening Sun eclipfed, invisible Venus sets at 5 h. 59 min. afternoon Day is 11 hours 40 minutes long	22	29 1	90	1	Seven S	Stars fo	outh a	t3h	. 39 m	n. mor	ning
25 2 16 0 54 Mars rifes at 6 h. 31 min. evening 26 3 14 1 17 Sun eclipfed, invisible 27 4 13 1 41 E 5 12 2 4 Venus sets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long		1	8 0	s 7	Sun en	ers 🗠	4 h.	49 n	ain. ń	orning	
26 3 14 1 17 Sun eclipfed, invisible 27 4 13 1 41 E 5 12 2 4 Venus sets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long					34						
E 5 12 2 4 Venus sets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long				7	Mars r	ines at	on.	31 m	in. ev	ening	
E 5 12 2 4 Venus sets at 5 h. 59 min. afternoon 29 6 12 2 28 Day is 11 hours 40 minutes long		1 3			The second second	ipiea,	inviii	DIG			
29 6 12 2 28 Day is 11 hours 40 minutes long						fets a	- h		nin af	ternos	n
		1)									
							4			0	

ant

risk ay

fant

me

b.

M

D

1

7

19

M

D

1

2

3

6

8

9

10

11

E

13

14

15

17

E

20

21

22

23

24

25 E

27

28

20

30

W	ING	•			October, 1783. 27
M	Sa	tur	n	1	Jupiter Mars Venus.
D	Long	. D	ecl	. IL	ong. Decl. Long. Decl. Long. Decl.
1	den - rinner	No.	-		954 22 8 6 8914 0 8 29 6m26 20 8 31
7	6 41	22	5	3 23	35 22 3 6 28 0 51 5 42 20 33
13		22		3 23	
19		3 22		3 24	48 21 47 2 57 1 0 26 43 15 47
M	Sun'	-	Su	-	Observations
D	Long	it.			
1	80	10	3 s	14	Clock after the Sun 10 min. 22 sec.
2	9	9	3	38	Seven Stars fouth at 3 h. 2 m. morning
	10		4	I	
	II	7	4		y greatest Elong. from the Sun
E	12	6	4	48	C C
	13	0	2	11	Saturn sets at 9 h. 36 min. at night
	14	5	5 5 6	1	Jupiter fets 10 h. 48 min. at night
	15	4	5	57	Day is 11 hours 2 minutes long
	16	4	6		Days are decreased 5 hours 34 minutes
1	18	3	7		Day breaks at 4 h. 39 min.
E	19	2	7	28	,
	20	1			Mars fets at 5 h. 8 min. morning
	21	1	78	13	Venus fets at 4 h. 53 min. afternoon
	22	C	-	35	
	23	0	8		Clock after the Sun 14 min. 22 fec.
17	24	0	9	19	Twinght ends at 7 h. 9 min.
18	3 24	59	9	41	Day is 10 hours 26 minutes long
	25		10	3	
	26	59	10	25	Seven tars fouth at 1 h. 55 min. morning
1	127	59	10	46	Sun is die East at 5 h. 25 min.
	2 28	58	II	. 7	C
4	3 29		II		Sun enter m o h. 42 min. afternoon
2.		150	11	50	
E		50	12		Saturn setsat 8 h. 30 min. at night
2		50	12	51	Jupiter setsat 9 h. 45 min. at night
	7 3 4		13		Days are dereased 6 hours 44 minutes
1.2			13	32	
	9 5		13		Mars fets at 3 h. 55 min. morning
	117		114	11	Venus rifes at 6 h. 4 min. morning

al

in.

and ner. Ap.

and

0 ğ

0:

4:15

329

3912

003

St. Andrew

33

50

29 S

30 E Advent Sund. 11

М

D

7

7

13

10 20 N

I

W	IN	G.	100	S.	Day	November, 1783. 29
M	V	Sa	tur	n	1	Jupiter Mars Venus
D	Lo	ng.	11	ecl.	iLo	ong. Decl. Long. Decl. Long. Decl.
TI		-	_	_	_	038 21 8 37 2940 0 8 40 123 = 6 12 8 50
7	8		22	49	26	27 21 28 2 58 0 11 21 15 10 50
13	200	16	22		5 27	21 21 18 3 40 0 n 26 20 52 9 22 20 21 6 4 48 1 11 21 54 8 37
25			22		4 29	
M	S	un'	00.0	Sui		Observations
D					lin.	
I	18					Clock after the Sun 16 min. 14 sec.
E	9		19		50	
	10		59			Saturn fets at 7 h. 57 min. at night
	11		59			Jupiter sets at 9 h. 17 min. at night
	14		59	16	45	Seven Stars fouth o h. 50 min. morning
	15		- 00	16		Days are decreased 7 hours 20 minutes
	316			16		Day is 9 hours 10 minutes long
E	1			16		Twilight ends at 6 h. 32 min.
110	18	20 1	1	17	13	
1	119)	1	17		Day breaks at 5 h. 32 min
	2 20		250 71	17	46	
	3 21		-	18	2	greatest Elong. from Sun
	4 22		3	18	8	Clear of on the Con to min & Con
	5 2		3	18	34	Clock after the Sun 15 min. 8 fec. Mars fets at 3 h. o min. morning
	7 2			19		Venus rifes at 4 h. 30 min. morning
	8 2			19	18	venus mes at 4 n. 30 mm. morning
- 1	92		- 4	19		Saturn fets at 6 h. 58 min. evening
- 1	02			19	46	Jupiter fets at 8 h. 26 min. at night
2	1 2	9	7	19	59	Sun is due East at 4 h. 53 min.
		01		20	12	Sun enters 2 8 h. 53 min. morning
E		I		20	25	
1 .	O Day	2		20		Seven Stars fouth 11 h. 30 min. afternoon
	21	3		20		Mars fets at 2 h. 36 min. morning
1 1		4		21	12	Venus rifes at 4 h. 4 min. morning
	7 8	5		21	0.7	Day is 8 hours 14 minutes long
20 7	9	7		21	22	Days are decreased 8 hours 26 minutes
	E	8	14		4	
1	1			1		

ot

nd.

in-

W

M

DL

1 11

7 11

13 12

19 13

25 13

MI

DI

2 1

3 1

4 5

E

8

9

10

11

12

13

E

15

16

17

18

19

20

E

2:

2

WI	N	;.	1	1	D	ecember	, 178	3.	11.11.2	31
MI		Sat	ur	n	1	Jupiter 1	M	ars	Vei	nus
D	Lor	ıg.	D	ecl.	Lon	g Decl.	Long.	Decl.	Long.	Deci.
67	de l		-	8 42	anderson .	29 20 8 39	-		27-2-26	8 8 5
	11		22	20	1	39 20 24	10 14	4 2	1 m 30	9 4
13		A	22			3 1-	12 34	5 7	11 26	10 54
19	4000		32				15 7			13 4
M	S	un'	s	Sur	's	W. December of the same	Obser		all the second	10
D		_	_	Dec						
1	9				52	Clock after	r the Su	in Ior	nin. 34 f	ec.
2	10		16		1					
	II			22		Saturn fet	at 6 h	. 7 mi	n. evenin	g
	12			22	18	Jupiter set	s at 7 h	. 42 m	in. eveni	ng
	13			22	26	Seven Star	e fourh	at to 1		fternoo
E				22		Mars sets				
	16		2007	22	46	Venus rife				
	17			22	52	, Unas Inc		. 50 11		
	18			22	58	Sun due E	Caft at	h. 41	min.	
	110			23	3	Day is 7				
	2 20			23	7	Day breal	s at 6	h. I m	in.	
	3 21		27	23	12	Days are	decreas	ed 8 he	ours 48 n	ninutes
E	2:	2		23	15	Twilight	ends at	6 o'Cl	ock	
	5 2			23	19					
	6 2		-	23	21					
	7 2			23	24					
	8 2			23	25	Jupiter se	ts at 61	n. 56 n	in. even	ing
	92	_		23	27	Comer Con	na Caust		.0	G
	0 2			23		Seven Sta	e les c	atgh	. 38 m. a	ternoor
	2			23	28		Day is	h 13 m	minutes	long
	3.1	I		23	28	Shorten	Jay Is	11. 44	minutes	long
	31	2	700	23	27		d Sun a	re toge	ther	
		3	2. 97	1 23	25					ing
	- 26	4		2 23	23		es at 2	h. 531	nin, mor	ning
				4 23	2		- 3	,,,		
	E	5.		5 23	7	Days are	increaf	ed 4 m	inutes	
	29	7		6 23		Day is 7				
	30	8		7 23	1				to the	1 1
	31	9		9 23	(Clock be	fore th	e Sun.	3 min. 3	2 fec.

ain e. ay

the

32			ide and Declination	on for 1783.
Days		Declin.		Long. Declin.
1 4 7	4 16 9 2 13 49 18 2 43	24 \$ 41 24 36 24 20 24 0	26 23 13 s 49 1 20 11 38 5 54 9 25 9 646 7 521	6 34 5 5 48 4 37 7 16 1 37 8 34 1 0 27 9 39
13 16 19	23 49 28 7 42 3 49	23 nuary 25 21 20	12 u 40 5 b 32 14 18 4 u 11 14 27 5 27	0 1 5 10 24 0 C 55 10 C 49 2 20 10 53
22 25 28	14 13	19 55 18 22 16 33	7 36 5 18	4 24 10 40 6 59 10 10 10 0 9 23 1 3 48 25 n 24
4 7 10 13	14 37 18 27 22 34 26 57 1 A 35	6 39 5 Apr 15 3 = 34 1 42	11 6 4 47 17 29 17 11 24 1 19 26 0 \$29 21 \$23	7 28 25 2 10 35 24 20 13 11 23 34 15 12 22 5 46
16 19 22 25 28	6 <u>3.28</u> 11 38 17 6 22 38 28 32	2 30 4 47 7 12	6 4 23 2 12 42 24 13 1 18 25 5 23 28 25 31 28 12 25 44	16 6 35 21 6 58 17 19 21 3 17 22 20 17 16 44 19 32 15 32 18 56
1 4 7 10 13 16	12 2 10 15 8 49 7里58 7×52	18 n 29 18 18 18 14 18 28 18 41 19 46	21 32 21 n 28 26 29 21 14 1 59 20 36 7 A50 19 A31 13 53 18 51 19 59 16 26 26 0 14 32	20 14 4 n 47 25 20 2 829 0 815 0 ep 12 5 ep 0 2 1 9 en 36 4 s 11 14 b 2 6 15 18 e 17 8 17
22 25 28	10 11 12 39 15 54	20 23 20 53 21 20	1 53 12 25 7 36 10 11 13 8 7 52	22 22 10 3 26 16 11 57 29 57 13 37
1 4 7 10 13 16	6 26 9 7 11 014 12 20 13 5 8 12 7 28	16 28 17 29 18 025 18 046 18 046 18 18	29 5 10 s 19 27 48 9 7 27 7 31 8 39 29 6 9 8 3 1 cmb 17 11 be 14 9 16 12 be 21 13 32 14	1 46 20 14 6 D25 21 27 11 6 5 22 D31 15 m 45 23 6 24 20 5 27 24 m 9 25 11 24 5 39
22 25 28	7 16	17 7 15 19 13 38	13 32 14 21 17 59 15 53 22 32 17 25	29 56 24 58 4 43 25 7 9 33 25

WIN

If the tabi

n.

Equation of Time to the nearest Minute.

116	37.3	Lqu		1.4 10								
Day	Jan fub	Feb fub	Mar fub	Apr	May add	June	July	Aug	Sept add	Oét add	Nov	Dec add
-	min	m	m	m	m	m	m	m	m	m	m	m
1	4	14	13	4	3	3			-0	10	16	11
2	5	14	13	4	3 3 3 4	3	4	6	1	11	16	10
3	5 6	14	12	3 3 3 2	3	2	- 4	6	I	11	16	10 .
3 4 5 6 7 8 9 10	6	14	12	3	3	2	4	6	1	II	16	9 9 9 8 8 7 7 6 6 6 5 5 4 4 3 3 2 2 1 1 0
5	6	14	12	3	4	2 0	4	6	2	12	16	9
6	6	15	.12	2	4	2	4	5	2	12	16	9
7	7	15	111	2	4	2	4	5	2	12	16	8
8	7 7 8	15	11	2	4		5	5	3	12	16	-8
9	8	15	11	2	4	I	5	5	3	13	16	7
10	8	15	11	.1	4	1	5	5	3	13	16	7
11	9	15 15 15 15 15 15	10	2 2 1 1	4 4 4 4 4 4 4 4 4 4	1	4 4 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6	5 5 5 5 5 5 5 5 4 4	4	13 13 14	16	6
12	9	15	10	1	4	1	5	5	4	13	16	6
13		15	10	0	4	0	5	5	4	14	15 15 15 15 15	5
14		15	9	0	4	0	5	4	5	14	15	5
15	TO	15	9	add	4	0	5	4	5	14	15	4
16	10	14	9	0	4	fub	6	4	5 6	14	15	4
17	11	14		1	4	0	6		6	15	15	3
18	11	14	9 8 8 8	1	4	1	6	4 4 3 3 3 3 2 2 2	6	15	15	3
19	11	14	8	1	4	1	6	3	6	15 15 15	14	2
20	12	14	8	1	4	1	6	3	7	15	14	2
21	12	14	7	1	4	1	6	3	7	15	14	1
12	12	14	7		4	1	6 6	1 3	7 8	16	14	1
23	12	14	7 7 6	2	4	2	6	2		16	13	0
24	13	14	6	2	4	2	6	2	8	16	13	ſub
2	12	13	6	2	4	2	6	2 1 1 1	8	16	13 13 13	1
26	13	13	6	2	1 3	2	6	2	9	16		1
27	13	13 13 13	5	3	1 3	1 3	6	1	9	16	12	2
28	13	13	5	1 3	1 3	1 3	6	1	9	16	12	2
20		1	1 5	3	1 2	3	6	1	9	16	11	3
30	14	1	5 5 5 4	2 2 2 2 3 3 3 3 3	4 4 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 2 2 2 3 3 3	6 6 6 6 6	0	10	16	11	1 2 2 3 3 4
1	1 14	1	1 4	1 ,	1 2	1 3	1 6	0	1	16	1	1 4

f the equal or clock time he given; add or subtract the tabular numbers to or from it, as directed in the table; the sum or difference will be the apparent or solar time. But do the contrary to reduce the apparent to equal time.

C

ECLIPSES

34	ECLIPSE		WING.
Ecl	ipfes of Jupiter		- * hit = 10.7
January	February	March	April
	Immeriions	Immersions	Immerfions
	1 0 0 33	1 7 36 5	2 4 14 46
	2 18 28 45	3 2 4 48	3 22 43 36
	4 12 57 0	4 20 33 31	5 17 12 25
The Fellenson	6 7 25 18 8 1 53 36	6 15 2 15	7 11 41 16
The Eclipses of Jupiter's Satel.	,,,,,,		9 6 10 4
lites will not be	9 20 21 58	10 3 59 47 11 22 28 36	3.).
visible this	13 9 18 49	13 16 57 25	12 19 7 36 14 13 36 21
Month, Jupi-	15 3 47 16	15 11 26 16	16 8 5 6
ter being too	16 22 15 45	57 5 55 5	18 2 33 50
near the Sun.	18 16 44 18	19 0 23 56	19 21 2 32
	20 11 12 51	20 18 52 48	21 15 31 15
	22 5 41 27	22 13 21 41	23 9 59 50
	24 0 10 4	24 7 50 32	-
	25 18 38 44	26 2 19 22	1 0 01
	27 13 7 26	27 20 48 14	
		29 15 17 5 31 9 45 55	
May] June	31 9 45 55 July	August
Immertions	Immerfions	Immeritons	Emerions
2 6 22 53			
4 0 51 24			
5 19 19 54			
7 13 48 22	6 15 48 46		
9 8 16 48	8 10 16 52	8 12 15 3	
11 2 45 14			0 11 5 35 1
12 21 13 39			1 13 0 42
, , ,	2 13 17 41 10		5 14 18 33 3
18 4 38 4			0 16 13 23
	1 19 1 5 2		
21 17 35 1			9 20 2 1
	1 22 14 1 4		
	5 24 8 29 4		8 25 9 28 5
27 0 59 5	7 26 2 57 5	8 24 12 46 4	6 27 3 58
28 19 28	8 27 21 26	8 26 7 15 2	26 28 22 27
30 13 56 1	7 29 15 54 1		9 30 16 57
		29 20 12 9	
		1 31 14 41	11

29

To the I lesco 15 se Eme:

3 fec. 8 min nutes make tion i Britis

32 15 56

ns

31

31 51

57

Se	September 1			080	ber	1	N	over	nber		. 1	lecer	nher		
En	Emerions			Emerions				i merhons				Emerhons			
1	11	26	23	1	13	48	4	2	10	35	2	2	12	40	3.1
3	5	55	51	3	8	17	33	4	5	3	57	4	7	8	42
5	0	25	19	5	2	47	3	5	23	32	50	6	1	36	52
6	18	54	48	6	21	16	30	7	18	I	40	7	20	5	C
8	13	24	17	8	15	45	57	9	12	30	28	9	14	33	5
10	9	53	48	10	10	15	22	11	6	59	14	11	9	1	8
12	2	23	19	12	4	44	46	13	1	27	58	13	3	29	9
13	20	52	51	13	23	14	9	14	19	56	36	14	21	57	8
15	15	22	23	15	17	43	30	16	14	25	12	16	16	25	6
17	9	51	54	17	12	12	49	18	8	53	45	18	10	53	5
19	4	21	25	19	6	42	6	20	3	22	15	20	5	21	3
20	22	50	57	21	1	11	21	21	21	50	42	21	23	49	C
22	17	20	30	22	19	40	34	23	16	19	7	23	18	16	57
24	11	50	2	24	14	9	44	25	10	47	29	25	12	44	52
26	6	19	33	26	8	38	52	27	5	15	49	27	7	12	48
28	0		3	28	3	7	58	28	23	44	7	29	I	40	44
29	19	18	33	29	21	37	1	30	18	12	21	30	20	8	41
1			-	31	16	6	2								

To illustrate the Use of the preceding Table by an Example.

Suppose on the 5th Day of October this Year, the Time of the Emersion of Jupiter's first Satellite be observed (by a Telescope) in an unknown Meridian, to happen at 4 h. 55 min. 15 sec. at Night; I find by the Table, that the Time of this Emersion will happen at the British Observatory at 2 h. 47 min. 3 sec. the same Day: The Difference of the Times is 2 h. 8 min. 12 sec. which being converted into Degrees and Minutes of the Equator, at the Rate of 15 Degrees per Hour, will make 32 deg. 3 min. the Longitude of the Place of Observation to the East; because the Time is more than that at the British Observatory.

ition.	Emersion observed — Emersion at Greenwich	_	1000	55 ^m 47	1000	
Oper	Emersion observed Emersion at Greenwich The Difference of Time Answering to	_= '		8		

C 2

.17

the

abo

Mar

Man Beg

Imr

Mid

Em

End

of .

is a

No

ne

Re

Ec

the

an as cœ Se

fri

Pa in the pe the

L

it

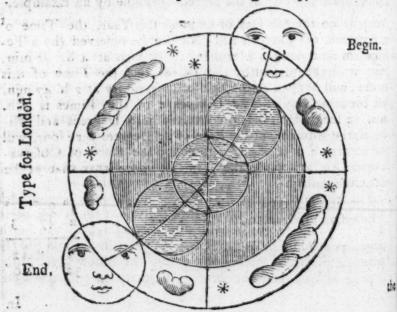
T

In the Periphery of this Year there happen no less than fix Eclipses, viz. four of the Sun, and two of the Moon; but of these fix, two only are visible in our Hemisphere.

The first is a small one of the Sun, upon Shrove Monday the 3d of March, about our Seven in the Morning; but though the Sun is at that Time above our Horizon, this Defect, by Reason of the Moon's great South Latitude, will not be visible to these Parts of the Globe; nor will it in any Part of the Earth

be very confiderable.

The second is a great total Eclipse of the Moon, very large, and of long Continuance; and if the Air prove favourable, the whole Eclipse may be seen, not only by us in this Kingdom, but also by the Inhabitants of all the States and Kingdoms in Europe and Africa, and the Western Parts of Asia; but in America the latter Part only will be visible, the Moon rising with them eclipsed. At the middle Time of this Eclipse the Moon is vertical to that Desart Coast of Anian in Africa, which lies 39 Degrees 14 min. East from London, and in 42 min. of North Latitude. At the Time of this Eclipse the Moon is 235256 English Miles distant from the Earth's Surface; the Height of the Earth's projected Shadow is 850236 Miles, and its Diameter or Width where the Moon passes through, is 5760 Miles; and



NG.

n fix

t of

by fible

irge,

, the

, but

Euerica

them

ver-

\$ 39

orth

5255 ht of

neter

and

this

the Moon's Velocity in passing through the said Shadow will be about 35 Miles and a half in a Minute of Time.

This Eclipse happens in the 29th Degree of Virgo, on Tuesday the 18th of March; with us in Great Britain, it may be expected nearly to correspond with the foregoing Type and Calculation.

March 10, 1783.	London			1	York		Edinburgh			1
Beginning -	7h	31m	308	7h	27m	38	7 h	13m	418	Night
Immerfion -	8	32	0	8	27	33	8	19	11	Appar.
Middle	9	23	. 0	9	18	33	9	10	11	Time.
Emersion -	10	14	0	10	9	33	10	I	11	- 111100
End -	II	14	30	11	.10	3	11	1	41	

Duration of total Darkness 1h 42m Digits eclipsed 210 27'.

The third is another folar Deliquium upon Tuesday the first of April, about our Nine at Night, therefore invisible to us; it is a very small Eclipse where greatest, which is in the remote Northern Parts of the Globe.

The fourth is another folar Defect; it happens upon Wednesday the 27th of August, about Half past Ten at Night, with Respect to us, therefore invisible: This is also a very small Eclipse where greatest, viz. in the unknown Northern Parts of the Earth.

The fifth is another very great and total Eclipse of the Moon, and visible in these Parts of the Globe; if the Air prove clear, as I hope it will, for the Sake of those who delight to make coelestial Observations: It happens on Wednesday the 10th of September at Night, and will be visible in all Europe and Africa, together with the Western Parts of Asia, and the East Parts of America; but in Siam, China, Chinese Tartary, &c. in the Eastern Parts of Asia, the Fore-part only will be visible, the Moon setting with them before the Eclipse be over; as appears by considering her Position, in respect to those Parts of the Earth, during the Time of the Eclipse; for at the Middle she is vertical in 4 Degrees 47 min. of South Latitude, and 6 Degrees 19 min. East Longitude from London, viz. about 150 Leagues off the West Coast of Congo, in Africa.

The Moon at the Time of this Eclipse is 4261 English Miles nearer the Earth's Superficies, than she was at the Time of the Eclipse on the 18th of March last. The Height of the Earth's projected Shadow in this Eclipse is 859116 Miles, and the Diameter or Width of the Shadow where the Moon goes through it 5828 Miles; and the Moon's Velocity in passing through

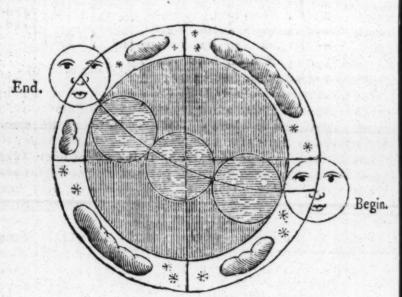
the

A

A.I

this projected Shadow of the Earth will be about 36 Miles in a Minute.

In this our British Isle, the Time and Manner of Appearance may be expected nearly to correspond with the following Type and Calculation for London, &c.



Sept. 10, 1783.	London			York			Edinburgh			1
Beginning -	gh	44m	OS	9h	39m	335	9h	31m	118	Night.
Immerfion -	10	43	45	10	34	16	10	.0	56	
Immersion — Middle —	11	34	45	11	30	18	11	21	56	App.
Emerfion -	12	26	15	12	21	48	12	13	56	Time.
End (on 11th Day)	1	25	30	1	21	1	1	12	41	1

Duration of total Darkness 1 h 42 m 30 s Digits eclipsed 210 20'.

The fixth and last is a solar Deliquium, on Friday, September the 26th, about Half an Hour past our Twelve o'Clock at Noon; but the Moon having at that Time great South Latitude, this Eclipse will not be visible to any Part of Europe; but in the Southern Parts of the World, where the Moon's Parallax diminisheth her Latitude, it will be visible; namely, in the Great South-Sea, or unknown Southern Continent.

A

NG.

es in

rance Type

gin.

t.

ber at ati-

pe; on's ely,

A

A Compendious Chronology of memorable Things fince the Creation to this present Year.

ADI	1.6.		120				
A.P.J.	before		Years				
	Chrift.	The Creation of the World	since.				
710		Noab born	5787				
1766		그리고 그렇게 그 사람이 있는데 가지 않는데 그는 것이 되었다. 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그	4731				
2366		Noab's Flood began	4131				
2481		The Babylonian Monarchy established	4016				
2718			3779				
2986		Toleph fold into Egypt	3511				
3143	31	Mojes born	3354				
3223	10	The Israelites Departure out of Egypt	3274				
3530		roy taken and destroyed by the Greeks	2967				
3710		Solomon's Temple built and dedicated	2786				
4126	2 1 1	Terusalem and the Temple destroyed	2371				
4176	230 0	Daniel delivered from the Den of Lions	2321				
4198		The Temple of Jerusalem rebuilt	2299				
4391		The Death of Alexander the Great	2106				
4710		The true Year of Christ's Birth	1787				
4714	01	The vulgar Year of Christ's Birth	1783				
A. D.							
. 33	The Paffic	on and Resurrection of Jesus Christ	1750				
70	Ferufalen	and the Temple destroyed by Titus	1713				
100	St. Fobn,	the last of the Apostles, dies Dec. 20.	1683				
313		ty triumphs under Constantine	1470				
476	Augustulus, the last Roman Emperor, deposed I						
606	The wick	ed Phocas makes Pope Boniface Head					
	of the	Church	1177				
608	Mabomet	broaches his Imposture at Mecca	1175				
872	Italy and	Rome plundered by the Saracens	911				
1012	Savain Ki	ng of Denmark conquers England	771				
1066	William I	Duke of Normandy conquers England	717				
1110	Arts and	Sciences taught in Cambridge	673				
1119		War between the French and English	564				
1300		ners Compass invented	483				
1330		ries discovered by an English Ship	453				
1380	10 1 11 110 10 000 1						
1453		ople taken from the Christians	403				
7 1 1 1 1	,		23				

C 4

A.D.

174:

175:

G.

ace.

320

283

265

247

193

180

179

178

170

165

158

158

142

140

134

125

123

118

117

111

109

108

103

99

98

98

95

95

94

91

85

81

81

80

79 76

73

69

Full

24

24

24

24

23

23

22

22

22

21

21

21

20

20

18 17

16

15

13

12

11

10

10

T

Mar

white

Ger

Equ

ftane

Ver

abou

are

past,

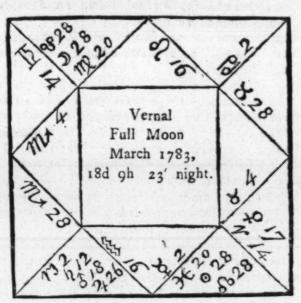
the .

the

ING.

Years fince.

The Configuration of the Heavens at the Time of the Vernal Full Moon this Year, will be as follows:



The Spring Quarter begins this Year on the 20th Day of March, at about 2 min. past Five o'Clock in the Asternoon; at which Time 20° of Virgo is on the Ascendant, and 18° of Gemini on the Mid-heaven, and the D is departing from a D to D 24 and 8; and two Days preceding the Vernal Equinox, happens the Vernal Full Moon, which two Circumstances will in some Degree counteract each other. At the Vernal Full Moon, the Face of the Heavens appears as in the above Diagram, if my Tables are true, and I believe there are none better, as they have been proved for many Years past, to answer most accurately.

At the Vernal Full Moon as above, you find 4° of m is on the Ascendant, and 16° of Leo on the Mid-heaven; h 4 and 3 are in the 3d House, & in the 4th, the o in the 5th, and & in the 6th; so that we find all the Planets sub Terra, except the Moon.

T

cular

fuch

neral more

blow

Caul

by P

cient

Rem

it W

Pon

But

Sati

por

tilla

titu

only

twi

nev

doe

the

Sto

Win in in Renay Ga

Moon, who is posited in the 11th House. At this Full Moon, there will happen a great and total Eclipse of her, as you may see by adverting to the Type and Time in Page 36. As this Eclipse happens in the 11th House, with some other corroborating Circumstances at the Equinox, it signifies Loss of Friends, and Disappointment in our Hopes and Expectations; shews Deceit and Want of Fidelity of Ministers and Counsellors, about Kings, Princes, &c.

It foreshews Scarcity of Corn and Fruits, and a Danger of a raging Pessilence, in those Places signified by my and H. It also signifies Death of Women, Vexations and Melancholy to many People; a general Rot amongst Sheep and Rabbits in England. It indicates, according to the Ancients, Frost and thick soggy Weather, unwholesome Air; and, according to Lilly's Aphorisms Banishment of great Men; Poverty, and Death of great Cattle, and Mortality of old People, Strife and Debate, and many tedious Law-suits.

The Lord of the Ascendant being situated in the 3d House, and lately separated from a & of &, and applying to a & of 24; and & is very soon beheld by a square Aspect of the 0, we may gather from hence, that Things will bear but a sour Aspect about this Time; and great Divisions, Uproars, and Disputes, will happen among Statesmen and Princes, which will disturb that Peace and Harmony which ought to subsite amongst us. The Effects of this Full D and Eclipse will continue nearly the whole Year. But some will despite and endeavour to ridicule the Influence of the coelestial Bodies; nay, and almost of the Deity himself, to which I shall only reply,

- " Adeo inselix est Eruditio scire,
- " Quod multi nesciunt periculoso
- " Etiam, intelligere quod omnes ignorant!"

CONTINUATION

n may

robo.

thews

llors,

of a

ly to

its in

t and

ng to

, and

e and

Toufe,

of of ne O,

a four

and

which

Subfift

l cou-

d en-

nay,

ely,

It

CONTINUATION from last Year.

Of their Scintillation, or Twinkling.

Their Scintillation is that Pathos, by which they are particularly distinguished from the Planets, for the Planets have no such Vibration, Twinkling, or Glimmering of Light; but generally all the fixed Stars, more or less; and at some Times more than at others, especially (stante Euro) while the Wind blows Easterly, as Schickardus (in Astroscop) observes. The Cause of this their Scintillation is variously discoursed of, both by Philosophers and Astronomers. Aristotle, among the Ancients (l. 1. poster. c. 13.) assigns the Cause thereof to their Remoteness from our Sight, by which they are weakly, and as it were by a trembling Weariness reached; which Opinion Pontanus following, thus afterts the same in his Urania, l. 2.

" Scilicet alta illis regio, sedesque repostæ,

" Quo postquam advenit de festo lumine visus,

" Defessus tremit ipse, tamen tremere ipsa videntur."

But this Reason is not at all convincing; for then Jupiter and Saturn, by Reason of their great Distance should in some Proportion affect our Sight with fuch a Kind of Tremor or Scintillation; which yet we find they do not in their greatest Altitude. Blancanus (in Sphæra Mundi) ascribes the Cause thereof only to Refraction; and therefore (fays he) Syrius and Procyon twinkle or glimmer more than any of the rest, because they never ascend beyond 45° above the Horizon: But then, why does not Jupiter, which is nearer to us (especially when within the Limits of Refraction) do the like? Schikardus is much of the same Opinion, and conceives this Phenomenon to arise from the unequal Superficies of the fluctuating Air or Medium, as Stones in the Bottom of a River, by the rapid Course of the Water, feem to have a kind of tremulous Motion, which is only in the crifped and uneven Undulation of the Stream. But if this Reason were true, not only the fixed Stars, but the Planets, may the Moon itself would be liable to the like Scintillation. Gassendus more probably conceives this Scintillation of the fixed Stars to proceed from that native and primogenial Light they

T101

only,

last (

the c

bulou

of th

and S

than

abov

red f

he h

(in f

in th

ciolu

in th

to d

gree

Obs

in t

whe

ther

rest

com

lesco

the

befi

abo " P

1.6

in a wh

and

rec

tig

the

tic

me

66

ha

are endued with, like that of the Sun; sparkling, and casting forth fuch quick darted Rays, as our weaker Sight cannot be. hold without that trembling Passion. To which likewise may be added, the most swift and quick Motion of theirs about their own Axis, by that Means making a more sudden and nimble Variation in those radiant Objects than the live can pursue. From which Opinion yet the learned Scheinerus, in his Mathematical Disquisitions, clearly dissents. The Scinullation of the Stars (fays he) is not their proper Revolution or Convolution, not any intern exestuating Commotion; no tremulous revibrating of the Sun-beams, proceeding from their first or second Motions; no unquiet or unequal Ejuculation of their proper Radii; no Tremor of the wearied Sight; not any of these, nor all of these; but the only and sole Intercision of their several Species falling upon the Eye, occasioned by the unquiet Intercurfation of Vapours variously affected. But this Reason of his will not satisfy the more curious Heve. lius, who yet allows that of their Circumgyration about their proper Axis, instanced by Gassendus, yet only as an adjuvant, not the fole Cause of their Scintillation; he imputing it rather to a constant Evibration of lucid Matter, or a continual Exspiration of fiery Vapours and Effluvia from those celestial Bodies, in the fame Manner as we perceive those Fulgurations and Ebullitions in the Body of the Sun; which by how much the groffer, and in greater Plenty they are ejaculated, by fo much the greater and more fignal Scintillation is caused by them. And with this Reason, and that of Gassendus, we may reasonably rest satisfied, until surther Observation and Inquisition shall produce one more convincing. As to

THEIR NUMBER.

If we look to those only which are most notable and visible, as being reduced to the fix vulgar Degrees of Magnitude, we shall find them, according to Ptolomy's Computation, to amount Pliny, yet (l. 2. c. 4.) reckons them to be 1600. to but 1022. But if we reflect upon the absolute Number of all the Stars in the Firmament, we may conclude them (though not with Jordanus Ernnus to be infinite, yet) to be innumerable, at least by human Calculation, either as looked upon by the bare Eye only,

fling t bemay bout and Can

ING.

s, in nuln or tretheir n of

not nteroned cted. eve. their

vant, ther xfpidies, and

the nuch nem. fonfhall

e, as thall ount 600.

s in lorleast Eye mly, only, or by the Help of a Telescope; by the Means of which last Galileo (in Nuncio Sidereo) reports, that he discovered in the cloudy Star in Orion, no less than 21 others; in the nebulous Star in the Præsepe, or Manager, 36; in the Asterism of the Pleiades, above 40; in the Space between the Girdle and Sword of Orion, no less than 80; and within little more than the Space of one Degree in the Constellation of Orion, above 500 Stars; by which numerous Discovery he was deterred from making out and describing that Constellation, which he had particularly intended to have done. Reitha likewise. in suo Radio Sydereomystic, p. 197.) affirms, that he observed in the same Constellation above 2000 Stars. Whereupon Ricciolus thus argues, that if the Constellation of Orion takes up in the Heavens the Space of 500 square Degrees, as it is found to do; and that every square Space, whose Side is but 2 Degrees, shall contain no less than 500 Stars, according to the Observation of Galileo before mentioned, there will be found in the whole Constellation of Orion, at least 62500 Stars; whereas, looked upon by the bare Eye only, there appear not therein above 63 Stars. According to which Proportion if the rest of the Constellations were examined, and the Difference computed of the Number of the Stars appearing by the Telescope over and above those discerned by the naked Eye; there might be reckoned above Ten hundred thousand Stars, befides those in the Via lactea. Nay, if one should reckon them above I wenty hundred thousand, " mihi quidem nihil ino-" pinabile finxerit," (says Ricciol. Almagest. Nov. tom. s. l. 6. p. 413.

Some of the Jewish Doctors reckon not above 12000 Stars in all; but those of the Cabala, no less than 20000 Myriads; which Number Schickardus conceives to be too transcendent, and believes that the whole Area of the Heavens would not receive above 26712 Myriads, though they were placed contiguous to one another, and but 1" of a Minute allowed for the Space that every one should take up. But, as to this Particular, conclude we rather with Schottus in Prælus in Firmament Itiner. Extatic. Kircheri in Schol. 1. "Punctum est Terra "quam incolimus, &c." This Globe of the Earth which we inhabit, which we harrass with so many Armies, so many warlike

Fleets,

WING.

Fleets, and which we divide with such insatiable Avarice, is but a Point; and yet we have not over-run every Kingdom, nor penetrated every Region thereof, although enriched with the Accession of America. There are greater Tracts from the Straits of Magellan to the Southern Pole, which be yet undiscovered. What think we then remains undetected in the vast Immensity of the Heavens, in that great Kingdom of the Almighty Creator, hardly to be approached by our weak Eyes! It is intolerable Arrogance therefore to imagine that our Sight, though never so strengthened by the Help of Telescopes, can discover all the Stars in the celestial Expansium, and extreme Folly to go about to range them within the Limits of any definite Number; that being the Work of God alone, who numbers the Multitude of the Stars, and calls them by their Names.

THEIR FIGURES.

As to their Figure, it is apparently spherical or round, maintained to be such by the Stoics and Manilius. Yet Plutarch (De Placit. Philosoph, l. 2. c. 14.) gives us the different Opinions of some of the Ancients; for Cleanthes held them to be pyramidal, or pointed; Anaximenes conceived them to be like Studs or Nails, fixed in the crystalline Firmament; others imagined them to be fiery or lucid Plates or Laminæ, like so many stat Pictures, not of any Thickness or Profundity; Scheinerus, and Antonius Maria de Reitha, will have them to be of divers Figures or Faces, of a polyangular Shape, and such the larger Sort of Telescopes represent them; or as Kepler, in Epitom. Astron. (p. 498.) describes them, like so many lucid Points or Sparks casting forth every Way their Rays of Light; so that we are to apprehend their Figure to be only physically spherical, not mathematically such; for in the first Acceptation they may be said to be round Bodies; however, according to the latter, their Superficies may be sound to be uneven, and to consist of many Angles and Sides.

ING. ce, is dom, with the indifferent te Allington, can reme denummes.

lean-m to ima-Pic-onius a po-nem; nany; fo not be be